

Bringing Evidence to the Classroom: Exploring Educator Notions of Evidence and Preferences for Practice Change

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Abstract

Successful implementation of evidence-based practices (EBPs) in schools requires an understanding of the factors influencing implementation and adoption. We conducted eight focus groups with school administrators and teachers to explore their views about EBP and the factors influencing EBP use within the school context. Educators believed EBP to mean one of three things: information that is supported by research evidence, by evidence of student performance, or evidence-by-proxy. We identified several factors influencing educator use of EBPs and intention to change practice: a school culture of openness and buy-in for EBP, relevance of EBP to student needs universally, and organizational support for implementation, were catalysts for motivating educators to change their practice. Understanding the practice change preferences of educators is important for effective EBP implementation in schools. Educators have a unique perspective of what constitutes EBP, and they can identify what they need in order to change practice.

Keywords: education; evidence-based practice; knowledge translation; preferences; teachers

Abbreviations: Evidence-Based Practice (EBP); Consolidated Framework for Implementation Research (CFIR)

1. Introduction

In recent years, educators have been increasingly tasked with delivering evidence-based practices (EBPs) that sometimes go beyond the educational domain to include school-based mental health interventions (Asen, Gurke, Conners, Solomon, & Gumm, 2013; Han & Weiss, 2005; Slavin, 2001). Irrespective of the content focus (e.g., mental health, literacy, mathematics), delivering EBPs in education essentially means moving evidence into the practice environment: the whole school or the classroom. Despite the imperative to bridge research and practice, ensuring that teaching is grounded in research evidence has been slower and less straightforward than expected (Biesta,

2007). The notion that education should be evidence-based raises intriguing questions about determining “what works”, and what counts as evidence. In addition, it requires identifying the factors relevant to the adoption of the EBPs by school staff. The present paper set out to explore school staff’s perceptions of EBP and the factors that can potentially affect the integration of EBPs into their educational practice.

Traditionally, the field of education views evidence as that which is based on research findings, with a strong emphasis on findings from randomized controlled trials. This follows closely the medical model, where the concept of evidence-based practice first emerged (Biesta, 2007). The impetus to transform teacher practice based upon research evidence has become prevalent in many countries around the world. In the United States, the word “research” is used more than 100 times in “No Child Left Behind”, the Elementary and Secondary Education Act, which encompasses research findings in child development that can inform teachers’ choices of classrooms strategies (Asen *et al.*, 2013). Similarly, in Britain, research findings are being synthesized and made available to educators on networks such as Evidence-Based Education UK, created to reduce the gap between educational practice and research (Biesta, 2007). In Ontario, Canada, government changes to the province’s educational system made capacity building a central policy focus, integrating data and research as key elements of capacity building for educators. Ontario schools are encouraged to base their decisions on combined evidence, including their own data, action research, and the broader research literature (Levin, 2010).

As in the medical model, randomized controlled trials are considered the gold standard methodology in education, yet several researchers have questioned the extent to which a parallel can be drawn between medicine and education, cautioning us against viewing research as a purely technical endeavour (Asen *et al.*, 2013). In medicine, however, one of the most well-known definitions of EBP in healthcare emphasizes going beyond research evidence: "evidence-based medicine is the integration of best research evidence with clinical expertise and patient values." (Sackett, Straus, Richardson, Rosenberg, & Haynes, 2000). In education, this debate is still ongoing among experts in the field, but, at the school level, teachers’ and administrators’ views on what constitutes EBP have remained largely unexplored.

Translating EBPs from the realm of research to the reality of educational systems, boards, and classrooms is a complex and lengthy process which is influenced by several factors that we are still uncovering. The Consolidated Framework for Implementation Research (CFIR) posits that these factors include: (a) characteristics of the intervention (e.g., quality, complexity), (b) characteristics of the outer setting (e.g., external policy and incentives), (c) characteristics of the inner setting (e.g., compatibility, tension for change), (d) characteristics of the individuals (e.g., self-efficacy, knowledge and beliefs about the intervention), and (e) the implementation process (e.g., existence of opinion leaders and clear planning) (Damschroder *et al.*, 2009). The roles these factors play in effective implementation are supported by research evidence, but how these factors are weighted by importance in specific contexts, and exactly how they relate to or compensate for one another is not fully understood.

In schools, much of the research examining implementation of innovative practices has focused on characteristics of the inner and outer settings (Han & Weiss, 2005). Outer setting contextual factors that have been identified as shaping EBP implementation in schools include school reforms and national and provincial policies, which in turn determine resource allocation, administrative support, staff selection, training, evaluation, promotion, curriculum development, values and communication (e.g., Coburn, 2003; McLaughlin & Mitra, 2001). These studies commonly show that regardless of the nature of the program implemented, practice change is more likely to be sustainable when there is support from these outer setting contextual factors.

In contrast to the distal factors affecting EBP implementation, there has been less investigation of the individual experiences of school personnel; perceived barriers and facilitators, or personal

preferences for how they would like to be supported in their practice change. There are several reasons why it is important to examine more proximal teacher-related factors (Domitrovich & Greenberg, 2000). First, teachers are agents of change within the school context, and thus, critical to the implementation process. Second, implementation fidelity and education quality are determined to a large extent by teacher characteristics and behaviours. Third, research suggests that even when there is a high level of support from factors within the outer and inner setting, there can still be high variability in the way in which teachers adopt EBPs or innovations. Some of the factors accounting for variability in teachers' openness to altering their current practices and to sustaining EBP use include their feelings of self-efficacy, their beliefs about evidence-based practices, professional burnout (absorptive capacity), and quality of EBP training (for a review see Han & Weiss, 2005). For instance, teachers who hold high self-efficacy beliefs regarding their teaching performance were more likely to show interest in incorporating novel methods into their teaching practice (e.g., Guskey, 1988).

Other factors contributing to teachers' intention to change their practices, such as preferences for certain attributes of the training or implementation experience remain largely unexplored. Taking into consideration teacher preferences for practice change can impact implementation outcomes. In a recent study among teachers randomly assigned to "preference" or "no-preference" groups and trained to implement an intervention, those who had the opportunity to exert a preference adopted the intervention sooner and sustained higher fidelity and quality of implementation independent of coaching than the no-preference group (Johnson *et al.*, 2014). Though most teachers in the no-preference group also adopted the intervention and demonstrated high fidelity with coaching, implementation did not sustain after the withdrawal of coaching support. This research suggests that awareness and consideration of teacher preferences for practice change are important for effective practice change and EBP implementation.

The goal of the present study was to further investigate educator-related characteristics – teachers' definitions and understanding of EBP, as well as their reflections on attributes of the training or implementation experience that influence EBP uptake. These results can subsequently inform EBP implementation planning and contribute to effective implementation. This study was part of a larger 5-year research grant in EBP implementation for child and youth mental health, exploring an implementation model informed by recent developments in implementation science via five case studies in schools and child and youth mental health service provider organizations (Barwick, Barac, Kimber, Akrong, & Johnson, in preparation). Our proposed four factor implementation model sought to incorporate (1) educator or clinician preferences for practice change with (2) change readiness, (3) EBP attributes (e.g., quality of the evidence for the EBP), and (4) change facilitation processes, to inform EBP implementation planning. Here we present findings from focus groups with educators (teachers and administrators) with a discussion on the implications of our results for school based EBP implementation. Findings from focus groups in the child and youth mental health sector are reported elsewhere (Barwick, Johnson, Barac, & Akrong, in preparation). A related paper used a discrete-choice conjoint experiment to model factors influencing the decision of educators to adopt strategies for improving children's mental health outcomes (Cunningham *et al.*, 2014).

2. Methods

2.1 Participants

Focus groups were conducted with school administrators (four groups for a total of n=24) and teachers (four groups for a total of n=23) in Ontario's education sector with the aim of exploring their understanding of EBPs as well as their needs and thoughts relative to changing their

educational practices and adopting EBPs in their work. Following research ethics board approval at the Hospital for Sick Children and the school board, participants were recruited using two methods: (1) through telephone contacts with key individuals within Ontario school boards who were asked to circulate a flyer and invite their colleagues to participate; and (2) via a study flyer that was posted in the break rooms and photocopy rooms of participating schools and school board offices. Educators were eligible to participate if they were a teacher or administrator (principal, vice-principal, system-level administrator) in an Ontario school.

2.2 Procedure

Participation was managed on a first come, first served basis for those who met inclusion criteria. Teachers were eligible to participate if they taught children/youth at an Ontario District School or private school and were not also responsible for the supervision of other teachers. School administrators were eligible to participate if they were managerial staff at an Ontario District School or private school and were responsible for the supervision of teachers. Of note, three school board-level administrators participated in one of the school administrator focus groups because the focus group occurred alongside a larger staff meeting that was taking place. Their presence did not appear to alter the freedom of speech of other participants in the group in any perceivable way. Consent to participate and to be audiotaped was obtained from all participants by means approved by the Hospital for Sick Children Research Ethics Board. Demographic information collected for focus group participants included gender, age, professional role, and prior EBP training. All focus groups were conducted by one investigator (PC) who is an educator and researcher. Data collection involved independent focus groups for teachers and principals/administrators to facilitate an atmosphere conducive to free speech and trust in which participants could comfortably voice their thoughts and opinions. The number of participants in each group ranged from four to eight, while the length of the sessions ranged from 90 to 120 minutes, with the latter being the maximum time allotted. Participants were remunerated for their involvement with a gift card from a book store valued at \$30, and travel/parking costs covered to a maximum of \$15.

Focus group questions were developed by the investigative team and designed to engage the participants in an exploratory discussion of their opinions and experiences with EBPs in their teaching practice, as well as the factors they regard as important in the process of practice change. Administrators and teachers were asked similar questions with slight role-specific variations. Administrators were asked: 1) What do you think of when you hear the words “evidence-based practice”?; 2a) What things would influence your intention to select specific professional development training programs for your teaching staff?; 2b) How do you go about finding these specific professional development training programs?; 2c) How do you implement such programs in your school?; 3) What factors do you think influence the intentions of your teaching staff to change their practice? Teachers were asked: 1) What do you think of when you hear the words “evidence-based practice”?; 2) What things would influence your intention to change your teaching practice?; 3) What things would influence your use of an evidence-based practice in the classroom?

2.3 Data Analysis

All focus groups were audio taped and transcribed verbatim. A code book was developed and the focus group transcripts were independently coded by the investigative team (MB, LB, SJ). Data were analyzed using a constant comparative technique (Fram, 2013) which involves breaking down the data into discrete ‘incidents’ (Glaser & Strauss, 1967) or ‘units’ (Lincoln & Guba, 1985) and coding them to categories. The three researchers independently reviewed and coded transcripts to identify relevant themes. Theme code consensus was achieved via meetings to review and compare codes and discuss discrepancies.

3. Results

3.1 Description of Participants

Table 1 summarizes descriptive statistics for teacher and administrator background information. Overall, 24 teachers participated in the focus groups. One participant, a student trainee, was subsequently excluded from the sample because of very limited teaching experience. Data for the remaining 23 teachers were included in the analysis. In all, 62.5% of teachers identified themselves as classroom teachers, while the remaining participants reported working in a special education capacity (e.g., Special Education Teacher, Learning Resource Teacher, Developmental Learning Teacher, counselor for children with ADHD and severe learning disabilities). Teacher participants represented all grade levels (junior kindergarten through grade 12). In addition, 25 administrators participated in the focus groups. One administrator failed to return questionnaires and was excluded from analysis; only data for the remaining 24 administrators were analyzed. Most of the participants reported working as school principals (70.8%), as vice principals (12.5%), or system-level administrators (16.7%). In terms of previous experience with EBPs, thirteen teachers and eight administrators reported being trained in the use of one or more of what they deemed to be an evidence-based practice relating to reading, math, social skills development and/or behavior management. We accepted their assessment of whether the practice(s) or program(s) in which they had been trained were indeed evidence-based and made no assessment of whether the program(s) could truly be classified as evidence-based according to standardized definition of quality evidence.

Table 1. Participant demographics by participant group

	Teachers	Administrators
Gender		
Female	87%	87.5%
Male	13%	12.5%
Age group (years)		
25-34	34.8%	0
35-44	39.1%	16.7%
45-54	17.4%	75%
55+	8.7%	8.3%
Average time in role (years)	7.85	5.83
Highest level of education		
Bachelor's degree	60.9%	25%
Master's degree	39.1%	74%
Prior EBP training	56.5%	33.3%

As common themes emerged from both teachers and administrators they are reported together for simplicity. Mapping onto the two main goals of the present study, the initial focus group questions examined teachers' and administrators' definitions of EBPs, followed by questions exploring their preferences for practice change and EBP implementation (see Table 2).

Table 2. Summary of the themes describing teacher and school administrator preferences for EBP characteristics and aspects of the implementation process

School Culture / Organizational Conditions	
<ul style="list-style-type: none"> • Administrator buy-in • Teachers' general openness to practice change • Existence of champions and supportive external partners 	
Relevance	Logistical practicality
<ul style="list-style-type: none"> • Meets students' needs • Leads to positive student outcomes • Accessible, plain language • Manualized, observable, easily put into practice 	<ul style="list-style-type: none"> • Training support • Support in balancing competing priorities • Time support

3.2 Definitions of Evidence-Based Practice by Teachers and Administrators

For teachers and school administrators, the term 'evidence-based practice' evoked references to 1) evidence from research, 2) evidence from student performance, and 3) evidence-by-proxy.

3.2.1 Research Evidence

For some educators, the term 'evidence-based practice' pertains to the existence of empirical research in support of positive student outcomes. One participant stated: "If you're implementing a new program, there's research to indicate that it's successful and it achieves some type of goal that you're trying to achieve as a collective group." It was assumed that EBPs selected for adoption have demonstrated repeated effectiveness in the school context.

3.2.2 In-class Assessment of Student Performance

For most educators, 'evidence-based' pertains to more proximal, in-class sources of evidence: "The research is one thing, but [EBP means] looking at the students that we have and tracking their behaviors, tracking their performance and designing programs built on what the students are demonstrating they have a need for." Many educators felt that in-class assessment of student performance constituted the evidence in support of a program: "When I'm talking evidence, I'm talking (about) collecting it myself and then looking at (...) strategies I can take to try and look at correcting the behavior and improving it." Educators conceptualized evidence from in-class student assessments as informing their decision-making and guiding their teaching practice: "When you're looking at formative assessment with the students, that's the evidence of where we need to go next."

3.2.3 Evidence-by-Proxy

While the term EBP was thought to refer to empirical research for some educators, many also reported being unaware of the empirical evidence in support of an EBP. Rather, they defaulted to accepting that system-level initiatives were deemed to be supported by research evidence by someone else, somewhere along the administrative continuum. In other words, they viewed programs and practices as being supported by research evidence on a *proxy basis*, by virtue of the fact that implementation of the program had been endorsed at another level within the school board or the Ministry of Education. One teacher admitted, "I haven't actually read any evidence or research on it, but I'm just assuming that since the Board puts so much money into it, that there would be research backing (it)." In the same vein, a school administrator commented: "The first

thing that came to mind as an administrator is ‘What evidence-based practice is my board now telling me that we’re doing!’” Similarly, another participant noted: “I would assume because the board chose it, that it would be [an EBP], but I have no idea because we’re just told to do it.”

Some educators were not at all familiar with the term ‘evidence-based practice’ or its meaning, focusing instead on their own experience of a strategy’s success or failure in the classroom: “Often people will present a program and because they know it’s worked with some students in one school, they’ll say it’s evidence-based. But evidence-based is an actual title, right? Evidence-based has proof behind it and I think people think their own experience is proof enough. So, I think that term is just very casually tossed around. I don’t know that people really know what it means.”

3.3 What is Needed for Successful Implementation of EBPs in Schools

Educators’ adoption of an EBP appeared to be influenced by broad factors such as school culture, the relevance of the EBP for the teaching context and student need, as well as more logistical and practical aspects of EBP implementation. School culture appears to act like an initial filter in the implementation process. Once this initial filter is navigated, adoption of a new practice appears to be influenced by 1) the EBP’s relevance, and 2) the practicality and feasibility of implementation process.

3.3.1 School Culture

School-based EBP implementation appears to be influenced by the general school culture (a characteristic of the inner setting) in addition to school board, community, and system level factors (characteristics of the outer setting). Themes emerged from the focus groups that related to administrator buy-in, teachers’ general openness to change practice in response to student needs, and the importance of champions and supportive external partners.

3.3.1.1 Administrator Buy-In

Administrators spoke of the importance of buy-in for successful implementation, noting that demonstrating the need for the EBP within the school is essential for securing teacher buy-in. The easiest ‘sell’ for classroom teachers is a “necessary-for-some/good-for-all approach”; in other words, a universal rather than targeted focus. Not only did administrators perceive teacher buy-in as essential, they also placed high importance on buy-in at the school administrative level. As one administrator stated, “I think you get the same buy-in at our level as well; if we can see the success, then it translates down [to the teaching staff].” Given the vast number of initiatives being introduced into the school system at any one time, administrators also discussed the importance of their role as gatekeepers in filtering which information is communicated to their teaching staff and when, so as not to overwhelm them.

3.3.1.2 Teacher Openness to Practice Change

Having an open attitude towards altering their own teaching practice was facilitative for EBP implementation, whether based on observed student need or dictated from higher hierarchical levels. Administrators described this attitude as follows: “I think it’s like everything else, that if it’s coming down the pike from the Ministry, you’re going to have the trailblazers and you’re going to have the resisters on your staff. It’s going to be received in different ways and sometimes people don’t buy into it until they see that it’s successful, for themselves (sic).”

Teachers who felt like they were part of the implementation process and were able to contribute in a meaningful way cultivated a sense of ownership in the decision process, which related to buy-in inasmuch as it increased their support of EBP use. Conversely, teachers also spoke of encountering resistance amongst their colleagues, which inhibited buy-in at the individual level. One teacher

noted, “Sometimes colleagues are very resistant. Either they feel threatened by change or as if somebody is trying to order them or coerce them into implementing a certain strategy because some researcher has said it works.”

3.3.1.3 Existence of Champions and Supportive External Partners

Educators perceive EBP implementation as supported when dedicated in-school staff teams participate in determining if the practice is a good fit and deciding how it might best be implemented within the school context. Several school principals referred to the key role of specialized liaison support within a board-wide improvement strategy in helping to determine a school’s areas of need and to assist in the implementation of best-suited initiatives. Professional learning communities were identified as a hub for effecting change within some schools. These communities were praised for their benefits insofar as reducing the burden of effort for each teacher in learning a new approach, building capacity, promoting sustainability of an initiative within a school through shared learning and collaboration, and providing a setting in which a new approach can germinate and grow amongst a small group of teachers with a vested interest. “I think it depends on the support around you as well, in terms of administration and your colleagues and if other people are on board and the support from admin (sic) in terms of encouragement even [...]”

3.3.2 EBP Relevance

School personnel identified EBP relevance as key to implementation success. They preferred EBPs that were relevant to the teaching context and student cohort, that were practical, that met students’ needs, led to positive class outcomes, were easy to access, were presented in a plain language, were manualized, and easily put into practice (simple versus complex).

3.3.2.1 EBPs that Meet Students’ Needs

EBPs that are perceived to meet student needs and to be relevant to the majority of students in the classroom are preferred by school personnel: “It’s essential to get staff buy-in for any new initiative, and in order to get staff buy-in, you have to demonstrate that there’s a need.” This applied regardless of whether the EBP was introduced as a top-down, system level initiative (i.e., school board, the Ministry of Education) or a bottom-up, grassroots initiative from within the school.

3.3.2.2 EBPs that Lead to Positive Student Outcomes

Teachers’ intention to change their practice also related to student success; teachers want to know that a new practice will help their students to succeed in school: “I think of making decisions based on the recording of practices and behaviors of students — the successes of students.” The motivation to implement something new was ultimately viewed as directly related to its end result in classrooms, regardless of the empirical evidence of quality and effectiveness: “People need to *see* the benefit of it. I mean that we need the proof first, right? And then people need the support. [...] if I was going to be motivated to make a change, I would want to know that it really works before I even try it because there’s evidence or there’s proof somewhere, or I respect somebody who’s telling me that.”

3.3.2.3 Evidence that the EBP is Accessible and Understandable

Teachers seek evidence from other colleagues, from the internet and grey literature/print materials, and they prefer plain language sources of research evidence that are distilled and easy to understand; the less replete with academic jargon, the better: “finding a way to (...) just get to the meat of it in a very direct and nicely communicated way would be helpful, I think.” One administrator summarized this idea as follows: “Any session I’ve done, they’re always saying ‘how

is this going to help me in my classroom tomorrow?’ That’s what they want to know — and they want to know in a simplified language with a kind of example.”

Educators seek out the opinions of educational leaders and experts when possible, and struggle with the lack of access to academic journals, which typically require costly institutional memberships. School administrators turn to colleagues, grey literature, and to Ministry of Education documentation when seeking out programs to meet their needs: “There’s a distrust of data that comes from elsewhere, but if it’s the... teacher down the hall and they’ve proved that this made a difference, well, now you’ve got buy-in and it grows from that.” This reflects the preference for accessible, anecdotal, plain-language evidence of the practice’s effectiveness over formal research evidence.

3.3.2.4 EBPs that are Manualized, Observable, Easily Put into Practice

Teachers communicated a clear need for practicality in the teaching and learning process. The more algorithmic and step-by-step a new approach could be described, the better. They wanted only the essentials and to be convinced that the new strategy could help them in their classroom immediately: “I was going to say *do-ability* [...] I still consider myself a beginner teacher, and so I would say if it’s feasible to implement at that time, then I will do my best to do it.” Teachers expressed a preference for materials that describe the new practice in order to support fidelity of its implementation: “Modeling for the staff and also providing some kind of written component of [...] the method of it so that, you know, we’re not re-inventing and starting over and figuring out how to apply it in our class.”

3.3.3 Practicality of the EBP Implementation Process

The characteristics of an EBP and its relevance to student needs are important attributes of EBP implementation for teachers. However, the way in which the new practice is implemented — in other words, the logistical practicality of the implementation process — matters for teachers as well. Aspects of the implementation process such as receiving training support, managing the multiple roles they have within the school, and time allocation also emerged as important from the focus group discussions.

3.3.3.1 Training Support

School personnel expressed a need for support, both during and after a decision to implement a new practice has been made: “I also want to know what support I’m getting... are you just giving me this and then ‘see you later,’ or is there going to be some follow up? Is there some training for me? I would want to be supported to make a change.” They placed a lot of weight on being able to observe a new practice in action, having the opportunity to try it out themselves, and being supported on that journey: “Don’t just drop a binder in front of us... We need demonstration, we need practical, we need to see how it works, where it doesn’t work, where it does work, why and when.” For them, support took the form of time, resources, and mentorship/coaching: “There’s supposed to be a teacher that’s highly trained [...] and that is experienced with the intervention, that you can go to on an ongoing basis and that ideally would come and visit your classroom and see how things are going, too, on an ongoing basis.” Administrators also expressed the importance of supporting teachers through the change process, “It’s also about the permission to take risks and the support to take risks and the protection while they’re taking those risks.”

3.3.3.2 Support in Balancing Competing Priorities

School personnel discussed the very real pressures teachers face on a daily basis balancing the many priorities (e.g., classroom instruction, behavior management, parent interface, administrative duties) that compete with implementation and practice of an EBP or any form of curriculum change.

As one administrator put it, “I’ve got my staff saying, ‘you can’t give us one more thing to do’.” Furthermore, teachers described the many roles they feel they must fulfill on a daily basis (e.g., nurse, psychologist, teacher, counselor, etc.) and how this contributes to their hectic workday, leaving little time and attention for practice change, let alone reflection and evaluation.

3.3.3.3 Time Support

Time for practice change was identified as essential to the success of the implementation process. Teachers described being asked to take on new initiatives but not being given the time to plan, try out, or reflect on the new practice. “They tell us to do all these things but they don’t give us time to do these things. We have to do it after school [...] and so I think people would be a lot more happy (*sic*) and more willing to try it out and implement things if they’re given time to plan, time to use, to test things out.” In the words of another teacher: “I think it depends on the support around you as well, in terms of [...] time to go to PD sessions and to really get that information...”

4. Discussion

Students cannot benefit from evidence-based educational practices they do not experience, and our common dilemma is that education systems have yet to develop the capacity to help all teachers learn to make good use of EBPs that enhance the quality of education for all students (Fixsen, Blasé, Horner, & Sugai, 2009). Moreover, we still know little about how to engineer successful EBP implementation (Fixsen, Naoom, Blase, Friedman, & Wallace, 2005). An important element in developing this capacity and the implementation processes that lead to successful change is to consider teacher and administrator preferences, experiences, and perspectives related to EBPs and practice change. Thus, the goal of the present study was to examine educator perspectives through multiple focus groups with teachers and school administrators, as part of a larger study of implementation science in education and child and youth mental health systems (Barwick *et al.*, in preparation).

School administrators’ and teachers’ understanding of the term “evidence-based practice” aligns somewhat with a conceptualization of evidence for effectiveness espoused by the Centers for Disease Control (Puddy & Wilkins, 2011). In addition to being comprised of the best available research evidence, the Centers for Disease Control emphasize the role of experiential evidence (based on professional insight, understanding, skill, and expertise that is accumulated over time; also referred to as intuitive or tacit knowledge), and contextual evidence (stemming from factors that address whether a strategy is useful, feasible to implement, and accepted by a particular community). School administrators and teachers largely view evidence as that which is directly related to student assessment and success in their own classrooms, rather than in more scientific terms. Not surprisingly, how well students succeed in their classroom is an educator’s immediate reality, and they report having little access – if any – to published sources of research evidence for effective instruction. What was unique in our findings, however, is that while educators do appreciate that EBPs have some measure of proof that ‘they work’ and that they are supported by research and/or evaluation, they are most likely to assume the strength and worth of this evidence by proxy, through directives of school board officials, administrators, and/or the Ministry of Education. Educators did identify the three components of evidence-based practice as defined by Sackett and colleagues (Sackett *et al.*, 2000), although not in a comprehensive way. In other words, evidence-based defined by empirical evidence, teaching experience, and student performance all resonated with educators, but more so as disconnected entities rather than in an integrated way.

Three main categories of factors came to the fore as influencing educators’ intention to change their practice: 1) school culture, 2) relevance of the EBP, and 3) the logistical practicality of the implementation process. School culture appears to act like an initial filter in the implementation

process, and points to the need to establish the ‘organizational conditions’ that will set the stage of effective EBP implementation. Once the organizational conditions are established, adoption of a new practice appears to be influenced by 1) the EBP’s relevance, and 2) the practicality and feasibility of implementation process.

School culture and organizational level factors included the importance of gaining buy-in for change from teachers and administrators alike, and the existence of support from external organizations. Also key was promoting teachers’ direct involvement in the change process, allowing them the opportunity to contribute to decision-making about which EBPs will be selected as most useful and relevant, and how these will be implemented within their school and classrooms. Furthermore, to influence teachers’ intent to change, new methods had to be highly relevant to the majority of their students, observable, and feasible to implement. Teachers want to be shown, in a step-by-step fashion, what to do and how to do it. Ultimately, student success is considered the most important motivator underlying teachers’ intent to change practice. Teachers value the opportunity to observe and try out new methods to convince them that they will indeed lead to student success.

With respect to the practicalities of the implementation process, educators are keenly aware that all anticipated practice changes contend with competing priorities and require the balancing of multiple responsibilities and roles and time management. When decisions to change practice are made at the top, there may be little consideration for what is needed to ensure that new learning is actually implemented and taken up several levels down, by teachers in the classroom. Teachers in this study reported needing time outside of the classroom to learn the new practice, good training, and ongoing support to feel comfortable adopting a new practice. This is in line with other research suggesting that teachers need coaching, over and above didactic instruction, and that they need time and opportunity to absorb and reflect on how to make the new practices work within the context of their current teaching practice and curricula (Han & Weiss, 2005; Reinke, Stormont, Herman, Puri, & Goel, 2011). Joyce and Showers (1980, 2002) highlighted the role of coaching in helping teachers maximize the effects of training and improve their teaching practice. The authors compared various training components (e.g., study of theory, demonstration, practice, and peer coaching) and found that transfer of the training content to the classroom setting was the most evident when coaching was used in conjunction with theory, demonstration, practice, and feedback. This combination of training methods resulted in 95% of the teachers showing transfer of knowledge to classroom practice, as well as strong knowledge and skills. In contrast, when no coaching was offered and training consisted of a combination of theory, demonstration, and practice, only 5% of the teachers showed transfer of new knowledge to the classroom setting and 60% of the teachers showed strong knowledge and solid skills (Joyce & Showers, 2002, p. 78). These findings demonstrate the significant impact coaching has in helping teachers change their practice.

The factors we identified as influencing practice change among educators align with those of the Consolidated Framework for Implementation Research (CFIR; Damschroder *et al.*, 2009) and they further shaped our work on implementation in the child and youth mental health sector (Barwick *et al.*, in preparation). Specifically, 1) factors related to school culture relate to the CFIR constructs in outer and inner settings, 2) the relevance of identified EBPs corresponds to the characteristics of the intervention and the individuals who will take it on; and 3) the practical consideration of EBP implementation relates to the process of implementation. Interestingly, the practice change preferences expressed by school personnel relative to the implementation of a novel EBP validate many of the constructs identified in the Damschroder framework.

Beyond providing support for the CFIR framework, our findings are consistent with those of other investigators. Elements of the school culture theme in our study (i.e., administrator buy-in, teacher openness to change practice and existence of champions for EBP) was also found to be a key factor in overcoming implementation barriers and ultimately facilitative of implementation success by school clinicians implementing Cognitive Behavioral Intervention for Trauma in

Schools (Langley, Nadeem, Kataoka, Stein, & Jaycox, 2010). Focus groups with special education teachers also showed that students' needs and the effectiveness of treatments for improving student learning inform teacher choice of instructional methods above and beyond any perceived pressure to use certain methods or the notion that a method is backed by scientific evidence. Teachers were the most concerned with how students responded to a new practice. In other words, they wanted to continue using only those programs that resulted in student learning (Gould Boardman, Arguelles, Vaughn, Tejero Hughes, & Klingner, 2005). Our findings are also consistent with those of a recent study looking at factors that influence teachers' engagement in training and consultation, in other words, in the initial stages of implementation (Lyon *et al.*, 2013). Factors that appear to be at play when teachers participate in training and consultation for a particular intervention and when they later implement the intervention include: time, practice utility, intervention/training content, training process, attitudes toward training, social influences, commitment to training and expectations.

Our finding that teachers relied on proximal sources of evidence was also evident among teachers in the United Kingdom (Williams & Coles, 2007). In the UK study, teachers and head teachers tended to rely on a relatively narrow range of sources for both general and research information, and showed a preference for readily available sources, particularly those available within school. This lack of access to empirical scientific literature is problematic for other practitioners as well, notably child and youth mental health practitioners (Barwick *et al.*, 2008). Furthermore, there is evidence that when teachers were given additional time to build knowledge and skills related to the novel practice, they were more likely to implement and sustain them (Penuel, Fishman, Yamaguchi, & Gallagher, 2007).

4.1 Limitations

Certain limitations to this study must be acknowledged. As indicated by their responses in some instances, participants' interpretation of the questionnaire item, "How many years have you been working in this role?" may have been more reflective of their total years of experience as an educator rather than the number of years in their current position. As a result, the reported group average years of experience may have been skewed. In addition, as mentioned, three board/district-level administrators (e.g., superintendent) attended one of the school administrator focus groups and the potential exists for this to have compromised the free speech and comfort of the other participants. This was not the perception of the focus group facilitator. Finally, the current findings, based on the sample of teachers and school administrators participating in this study, may not generalize to other groups of participants. Thus, future research examining the perspectives of teachers and school administrators working in different contexts will likely further our understanding of the topic.

5. Conclusion

This work, part of a larger study exploring EBP implementation in schools and child and youth mental health provider organizations, represents an effort to understand how best to support practice change in schools by identifying factors of importance to educators. It was apparent that opportunities for knowledge sharing, including improved access to published research, are desired by both teachers and school administrators. Educators emphasized the need for adequate resources and supports – at both system and organizational levels – to facilitate practice change. The importance of teacher and administrator buy-in, implementation practicality, and relevance to the classroom context and student need were described as essential motivating factors in support of practice change, as was training that heeds the principles of adult education, incorporating practice and coaching. Our findings suggest that school-based EBP implementation needs to begin with

establishing organizational conditions, followed by consideration of relevance, practicality and feasibility of implementation process.

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