

“Putting Science into Action”: A Case Study of How an Educational Intermediary Organization Synthesizes and Translates Research Evidence for Practice

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Abstract

Background: Knowledge brokering by intermediary organizations includes knowledge distillation processes (e.g., synthesis, translation).

Aims and objectives: This article explores how an educational intermediary performs research distillation when creating virtual knowledge reservoirs for educators.

Methods: The authors use qualitative data from semi-structured interviews, coded to consensus, and thematically analyzed.

Findings: During synthesis, intermediaries apply a “research lens” to evaluate the credibility of the evidence. During translation, they rely on their experience as educators to share evidence in a non-academic voice and generate “turnkey” strategies.

Discussion and conclusion: The article considers the knowledge brokering pipeline fallacy and examines the potential of ongoing processes for improving the effectiveness of intermediaries with the aim of diminishing research-practice and research-policy gaps in education.

Résumé

Contexte : Le courtage du savoir par les organisations intermédiaires comprend entre autres des processus de distillation des connaissances (par exemple, la synthèse et la traduction).

Ashley Metzger, Addison Duane, Amia Nash, & Valerie Shapiro. (2024). “Putting Science into Action”: A Case Study of How an Educational Intermediary Organization Synthesizes and Translates Research Evidence for Practice. *International Journal of Education Policy & Leadership* 20(1). URL: <http://journals.sfu.ca/ijepl/index.php/ijepl/article/view/1421> doi:10.22230/ijepl.2024v20n1a1421

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Buts et objectifs : Cet article explore comment un intermédiaire en éducation effectue une distillation de la recherche lors de la création de réservoirs de connaissances virtuelles pour les éducateurs.

Méthodes : Les auteurs utilisent des données qualitatives provenant d'entretiens semi-structurés, codés selon un consensus établi et analysés thématiquement.

Résultats : Lors de la synthèse, les intermédiaires appliquent une « lentille de recherche » pour évaluer la crédibilité des données obtenues. Lors de la traduction, ils s'appuient sur leur expérience en tant qu'éducateurs pour partager des données probantes de manière non académique ainsi que pour générer des stratégies « clés en main ».

Discussion et conclusion : L'article considère en quoi l'idée d'un pipeline de courtage du savoir est erronée et souligne le potentiel de processus continus pour améliorer l'efficacité des intermédiaires afin de réduire les écarts en éducation entre, d'une part, la recherche et la pratique et, d'autre part, la recherche et les politiques.

Keywords / Mots clés : intermediary organizations, knowledge brokering, knowledge distillation, use of research evidence / organismes intermédiaires, courtage du savoir, distillation des connaissances, utilisation des données de recherche

Introduction

It is well established that a “gap” exists between research and policy/practice (Carnine, 1995; Carnine, 1997; Snell, 2003; Vaughn, Klingner, & Hughes, 2000). Researchers spend considerable time *generating* knowledge, but research knowledge is not consistently applied in practice and policy settings (Davies & Nutley, 2008; Lavis, Robertson, Woodside, McLeod, & Abelson, 2003). Research-practice and research-policy gaps are prominent in education (Hemsley-Brown & Oplatka, 2005). Therefore, education researchers have sought to understand and promote the *use of research evidence* (Brown, MacGregor, Flood, & Malin, 2022; Lysenko, Abrami, Bernard, Dagenais, & Janosz, 2014; Nutley, Walter, & Davies, 2007; Penuel, Briggs, Davidson, Herlihy, Sherer, Hill, Farrell, & Allen, 2017).

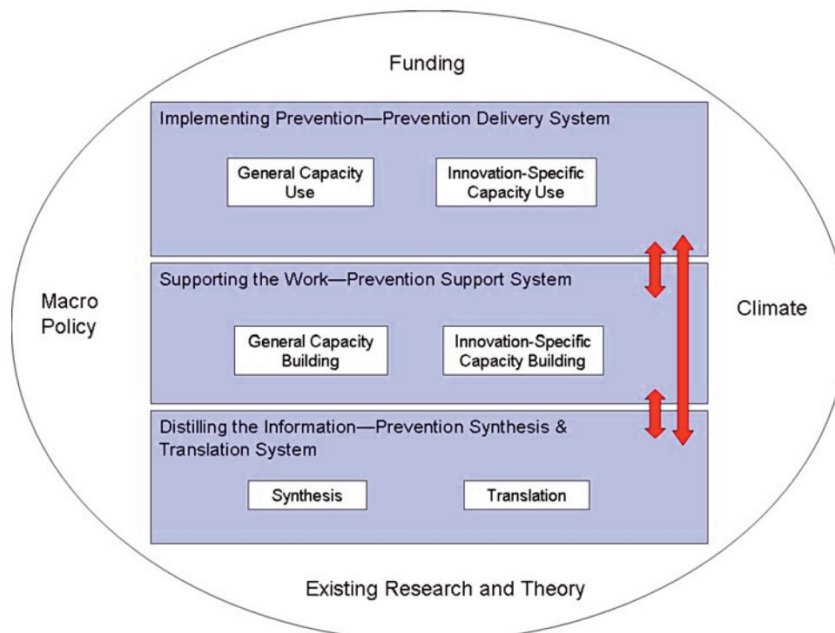
The use of research evidence depends, in part, on knowledge brokering (Neal, Neal, & Brutzman, 2022). Knowledge brokering—also discussed as knowledge mobilization, knowledge exchange, or knowledge transfer—is the process of mediating knowledge across boundaries to where it can be most helpful (Malin & Brown, 2020; Rycroft-Smith, 2022; Ward, 2017). Research has explored how knowledge brokering—one of many possible strategies for improving the use of research evidence in education—can involve a variety of approaches, such as connecting groups with resources, granting access to research evidence, liaising between groups, and/or diffusing ideas (Gould & Fernandez, 1989; Hemsley-Brown & Sharp, 2003; Neal, Neal, Kornbluh, Mills, & Lawlor, 2015; Farley-Ripple, 2021). The process of brokering research evidence for practice and policy is analogized as a “slow and leaky dissemination pipeline” (Neal et al., 2022, p. 8). The notion that it takes on average 17 years for research evidence to be taken up by practitioners and policymakers (Morris, Wooding, & Grant, 2011) motivates ongoing empirical work to understand and con-

tinuously improve the knowledge brokering process (Farley-Ripple, MacGregor, & Mazal, 2023; Neal et al., 2015; Wandersman, Chien, & Katz, 2012).

The interactive systems framework for dissemination and implementation

The formidable challenge of closing the research-practice and research-policy gap requires studying knowledge brokering itself. Although many frameworks explore knowledge brokering (e.g., Armstrong, Waters, Dobbins, Anderson, Moore, Petticrew et al., 2013; Bornbaum, Kornas, K., Peirson, L., & Rosella, 2015; Cooper, 2014; Neal, Posner, & Brutzman, 2023; Ward et al., 2009), this article uses the Interactive Systems Framework (ISF) for Dissemination and Implementation, introduced by Wandersman and colleagues (2008), to guide our efforts to build knowledge mobilization infrastructure in California (for details, see Shapiro et al., 2024). In the ISF, Wandersman and colleagues propose three interlocking systems to advance the dissemination and implementation of research knowledge: the Distillation System, the Support System, and the Delivery System (see Figure 1). They describe the Distillation System as functioning “to distill information generated through research and to prepare it for dissemination and implementation in the field. The primary activities of this system are to *synthesize* existing research and *translate* it for use by practitioners” (p. 175). Next, the Support System *builds capacities* for implementation (e.g., provides training, technical assistance, and coaching). Lastly, the Delivery System *uses capacities* for implementation (Wandersman et al., 2008). The ISF is a widely utilized framework in dissemination and implementation research (e.g., Leeman, Calancie, Kegler, Escoffery, Herrmann, Thatcher, Hartman, & Fernandez, 2017; Mueller, Tevendale, Fuller, House, Romero, Brittain, & Varanasi, 2017; Smith, Adimu, Martinez, & Minyard, 2016; Smith, Witherspoon, & Lei, 2021; Splett, Perales, Miller, Hartley, Wandersman, Halliday, & Weist, 2022).

Figure 1. The Interactive Systems Framework for Dissemination and Implementation



Source: Wandersman et al., 2008 (reproduced with permission)

Educational intermediaries: Synthesizers and translators for practice

Intermediary organizations function as a bridge to connect research producers (e.g., university researchers) and research users (e.g., district personnel) for the sake of knowledge brokering (Gagnon, Mailhot, C., & Ziam, 2019; Honig, 2004; Lopez, Kreider, & Coffman, 2005). This article uses the word “intermediary” to describe an organization that bridges the research-practice and research-policy gaps by filtering, interpreting, and exchanging information, knowledge, and resources between disconnected groups to affect change (Daly, Finnigan, Jordan, Nienke, & Che, 2014; Honig, 2004; Lopez et al., 2005; Neuhoff, Axworthy, Glazer, & Berfond, 2015; Scott, Lubienski, DeBray, & Jabbar, 2014; Sin, 2008). Intermediary organizations often straddle the line between research and practice by pivoting to and from both spaces and drawing deeply on their understanding of both communities (Rycroft-Smith, 2022), which makes them credible sources for both research and practitioner audiences (Mady, 2013).

A recent review identified 12 articles/chapters about education-sector intermediary organizations that function to disseminate evidence (Neal et al., 2023), but only three of these articles empirically explore their distillation process (i.e., Malin, Brown, & Trubceac, 2018; Scott et al., 2014; Sharples & Sheard, 2015). One of these studies explores the process of distilling evidence in a relationship with a single district (i.e., single audience distillation; Sharples & Sheard, 2015). Another of these studies explores the process of distilling evidence in the context of contested issues (i.e., single-issue distillation; Scott et al., 2014). Only one study explores the process of distilling emerging research directly to educators at large (i.e., distillation at scale; Malin et al., 2018). Malin and colleagues (2018) conducted a multiple case study of three intermediaries—Edutopia, the Marshall Memo, and Usable Knowledge—asking “(1) Why are these entities mobilizing knowledge? (2) What and whose knowledge are they mobilizing? and (3) What are the features of their knowledge mobilization approaches?” (p. 1). The present article conducts a case study of a single intermediary organization seeking to perform distillation at scale—the Greater Good Science Center—to discover *how* this entity distills information, as part of knowledge-brokering efforts to promote the use of research evidence in education.

Aligned with the ISF, the present article draws attention to the educational intermediary’s synthesis and translation distillation processes. We note that these processes are distinct and upstream from knowledge dissemination processes focusing on “packaging” research using various frames and formats and circulating through various channels. The authors distinguish synthesis and translation from *curation*, a term used to mean the selection or promotion of products that have already been translated for educators as an important but distinct act of knowledge dissemination.

Synthesis

Research synthesis is the process of compiling, summarizing, and integrating empirical evidence about a topic or innovation to create generalizations from knowledge claims or about core elements of programs, principles, or policies (Backer, 2000; Cooper, Hedges, & Valentine, 2009; Wandersman et al., 2008). Various methods can be utilized to synthesize research, including meta-analyses, systematic reviews, and literature reviews (Scott et al., 2014; Wandersman et al., 2008).

Research synthesis may provide a better basis for informing policy than findings from a single study or expert (Sheldon, 2005); it reduces the well-known risks associated with focusing on a single study, such as inadequate statistical power, researcher or expert bias, contextual variability, methodological and theoretical incompleteness, and replication failures. When research syntheses consider aspects such as timing (Lavis, Davies, Oxman, Denis, Bidle, & Ferlie, 2005; Petticrew, Whitehead, Macintyre, Graham, Egan, 2004), relevance (Lavis et al., 2005), presentation (Petticrew et al., 2004), theory (Pawson, Greenhalgh, Harvey, & Walshe, 2005), and the inclusion of various data types (Sheldon, 2005), they help organize the “chaos” of research science (Light & Pillemer, 1984, p. 61).

To synthesize research, primary research on the topic of interest must already exist (Cooper et al., 2009). Primary sources are analyzed (e.g., organized, related, compared, contrasted) across a body of evidence on a topic of interest, evaluated (e.g., appraised, selected, critiqued, valued), and constructed (e.g., assembled, formulated, developed, interpreted) into higher-order knowledge claims. Evidence synthesis is essential for end users, or anyone expected to use the research to inform their thinking, strategy, or decisions (Chalmers, Hedges, & Cooper, 2002; Sheldon, 2005).

Although often devalued by researchers relative to original scientific discovery, research syntheses are popular among policymakers, practitioners, and the public (Chalmers et al., 2002). To the extent academics are not incentivized to conduct research synthesis, intermediaries can do this essential work (e.g., Armstrong et al., 2013; Cheng, 2001; Ward et al., 2009). To our knowledge, few studies, to date, have substantively grappled with *how* education intermediaries synthesize research evidence for practice.

Translation

The process of converting synthesized research evidence for practitioner application is known as translation (Wandersman et al., 2008; Tseng, 2012). Synthesized knowledge is often not ready for use by the practitioners tasked with supporting and/or delivering interventions (Sogolow, Sleet, & Saul, 2007). Dissemination and implementation are more successful when information is made more applicable, accessible, and user-friendly, and highlights the value of an innovation or intervention (Backer, 2000; Clancy & Cronin, 2005; Glasgow, Vogt, & Boles, 1999; Schoenwald & Hoagwood, 2001).

Translating research evidence for practice requires understanding the research evidence and the intended audience (Wandersman et al., 2008; Woo, 2012). Translators should use the best available evidence, but also be responsive (e.g., able to rapidly respond to crises), credible, and trustworthy. Their translations should be context-specific, integrated, and conveyed through appropriate dissemination channels for the audience (El-Jardali, Bou-Karroum, & Fadlallah, 2020). Timely evidence to inform immediate problems of practice best serves the goal of bridging the gap between research and practice/policy (El-Jardali et al., 2020).

The present study

With the increasing calls to promote the use of research evidence (URE), scholars

have focused on understanding the absorptive capacities of districts/schools (e.g., Cohen & Levinthal, 1990; Daly & Finnigan, 2010; Farrell & Coburn, 2017; Honig, 2003; Zahra & George, 2002) and universities (e.g., Kim, Shapiro, Ozer, Stone, Villa, Schotland, & Kohashi, 2023) to make changes in response to brokered knowledge. However, given the critical space intermediaries inhabit between research and practice, there is an additional need to explore intermediary processes to inform their ongoing improvement to promote URE. To achieve this, a necessary first step is to understand more thoroughly and document intermediaries' work and processes.

Specifically, this article studies an educational intermediary that distills topical research evidence for educators to create and maintain information knowledge reservoirs (i.e., repositories and sources of knowledge and information for educators) on the internet. Educators rely heavily on the internet to access information (Lysenko, Abrami, Bernard, & Dagenais, 2015) because it makes information accessible and on-demand (Cerniglia, 2019). Studies have documented how educators frequently rely on their social networks, news media, and accountability data (e.g., dashboards) to make decisions that impact their learning and teaching (Bredeson, 2003; Ingram, Louis, & Schroeder, 2004; McDonald, 2014; Yanovitzky & Weber, 2019), much of which is now accessed virtually. Studies have also demonstrated that the internet can provide a platform for dialogue, sense-making, and advocacy regarding education initiatives (Supovitz, Daly, & Del Fresno, 2018). Knowledge reservoirs, containing research evidence synthesized and translated for specific purposes, provide a means to integrate research evidence into the broader information ecosystem in which educators engage (Weber, Armour, Lindstadt, & Yanovitzky, 2023). Educator engagement with virtual information became even more common during the disruption of in-person networks during the COVID-19 pandemic (Caduff, Lockton, Daly, & Rehm, 2023), expanding the need for knowledge reservoirs. Thus, the present study asks: *How does an exemplar educational intermediary organization distill research evidence in creating knowledge reservoirs to improve educational practice?*

Methods

For this study, the authors engaged in a single case study design (Yin, 2009). Like other studies relating to knowledge brokering and mobilization (e.g., Chua, Goh, Ong, Ow, Chiam, & Lim, 2023; Malin et al., 2018; Farley-Ripple & Jones, 2015; Daly et al., 2014), the single case study is sufficient to address the research question. In the present study, the authors use the single case study to conduct an in-depth exploration (Merriam, 1998) of what Cresswell terms a "bounded-system," that is, "an activity, event, process, or individuals based on extensive data collection" (1998, p. 485). We focus on one intermediary organization, in detail, using multiple sources of information to report case-based themes and generate a comprehensive description of this case (Yin, 2018; Merriam, 1998). Throughout the present study, the authors pursued rigorous data collection and analysis by triangulating data sources (Yin, 2009) and member checking (Thomas, 2017).

Case context: Greater Good Science Center

Connected to the University of California Berkeley, the Greater Good Science Center¹

(GGSC) seeks to share “the science of a meaningful life” (Greater Good Science Center, 2024, para. 2). According to its website, GGSC was founded in 2001. Its mission is to bridge research and the broader community by sharing science-based knowledge and skills that improve well-being and empower individuals to become change agents in their organizations and communities. With nearly 12 million annual readers, GGSC offers tools and tips that make research practical and accessible to parents, educators, health professionals, business leaders, and policymakers (Greater Good Science Center, 2024). The organization has several divisions, including Greater Good Education Program (GGEd), which provides free research-based strategies and practices for the social and emotional development of students and the wellbeing of educators to promote positive school culture (Greater Good in Education, 2024). This division, GGEd, was selected for the present study based on the organization’s function as a research distiller for educators who provide implementation support and educators who deliver strategies to promote wellbeing and are willing to share their distillation process broadly. Members of our research team have collaborated with GGEd through their work cultivating social and emotional learning (SEL) in California (see Shapiro et al., 2024).

Drawing on the taxonomy of educational intermediaries generated by Cooper (2013), the authors classify GGSC as a not-for-profit research brokering organization: university research centers and programs, which Cooper conceptualized as those educational intermediaries within university settings that “focus on connecting research to practice and policy communities” (although the category explicitly excludes researchers simply conducting research studies *in* community settings; Cooper et al., 2013, p. 194). Unlike the seven exemplar organizations Cooper identified within this category (three of which continue to exist today, and could be considered here), GGSC focuses on synthesis and translation (more than cataloging research reports in their original forms), and does not explicitly seek to promote research from its host university, nor connect researchers at its host university to the local community in which the university is located. Although these are important functions, GGSC’s work also functions as what Scott and colleagues (2014) classify as news media, in that its translational efforts package synthesized scientific communications for a broad audience. By nature of its emphasis on broad synthesis and deep translation, it is an attractive case for exploring Wandersman and colleagues’ (2008) depiction of the Distillation System. In the present study, the authors aim to learn from GGEd’s processes for the sake of informing gaps in current research and practice.

Study recruitment

This study was approved by the UC Berkeley Institutional Review Board. Aligned with our this study’s research aims, the authors sought to learn from GGEd’s executive director, education director, associate education director, and program coordinator. Aligned with our aim to explore *organizational* processes to distill research evidence, staff served as informants about the processes carried out within the organization. Thus, this article presents organizational-level information rather than individual-level staff information (e.g., demographic data, role in the organization).

Data sources. Aligned with existing single case study approaches, the authors used several data sources to investigate our research questions.

Staff interviews. In June 2022, the authors conducted one 90-minute interview via Zoom with GGED personnel responsible for education content, to learn about their collective approach to translation efforts at GGED. Then, through September 2022, the authors conducted four additional one-on-one semi-structured interviews. Interviews were approximately 60 minutes and occurred over Zoom. The authors obtained staff consent, and interviews were audio and video recorded. During interviews, we asked about the organization's efforts to promote the use of research evidence (e.g., How does your organization synthesize research evidence for practice use? What are your internal processes related to translation?). After each interview, the authors made a \$50 donation per interviewee to the organization.

Internal documents. The authors also analyzed two internal working documents that GGED uses for synthesis and translation. These digital documents ($N = 2$) provided to us by GGED staff—*Template and Document* and *Writing Guidelines*—were eight and three pages, respectively. They contained detailed information about how the GGED team engages in synthesis and translation.

Website. The authors also systematically reviewed two pages on the GGSC website (ggsc.berkeley.edu), which serves as the central hub of translated material and holds more than 350 practices and eight online courses: the “Write for Us” (WFU) and “Researchers: Write for Us” (R: WFU) pages.

Data analysis

Coding

Interview recordings were transcribed, checked for accuracy, and de-identified. Two researchers created an initial deductive codebook using the ISF, including code definitions (e.g., synthesis, translation), explicit inclusion and exclusion criteria, and illustrative examples (Creswell et al., 2007). Next, four team members coded each transcript to consensus (Hill, Knox, Thompson, Williams, Hess, & Ladany, 2005) using Dedoose. The authors completed consensus coding (Hill et al., 2005) by meeting weekly over a semester to review all coded transcripts and identify any coding discrepancies that were discussed and resolved.

The authors also coded and analyzed the internal documents and GGED webpages to triangulate the findings and bolster thematic analysis. All authors started this process by reading and familiarizing themselves with the digital content. Next, they used the same consensus coding process and codebook to code (e.g., synthesis, translation).

Analysis. In conducting a qualitative thematic analysis of all data, the authors looked simultaneously at the coded interview and document data. Then, we engaged in reflexive thematic analysis (RTA; Braun & Clarke, 2021). Though architects of this analysis argue against reducing such an analysis into distinct steps (Braun & Clarke, 2021), RTA generally tends to include familiarization, coding, generating themes, nominating illustrative quotes, refining, and finally, finalizing themes. The authors followed this process, adding consensus coding and iterative and interpretive dialogue wherever necessary, and continually returned to the research question.

Findings

The analysis generated themes related to the distillation of research evidence, as described by representatives at the intermediary organization.

Synthesis

Knowing how and when to apply a “research lens”

In generating themes related to synthesis, the authors found that staff relied heavily on their research training and a “research lens” when synthesizing. A key component of applying their “research lens” was possessing advanced credentials, such as a master’s or doctorate degree. While advanced degrees were not necessarily a requisite to the work of synthesis, GGED staff reflected on how having that level of training to understand empirical literature afforded them the “tools to dive into academic research.” One staff member explained how many in the organization understood the role of advanced degrees: “You need to have a doctorate to do this kind of work because you need to hold all of these things with intention.” These credentials were a vital part of their synthesis process, as one staff highlighted: “Research is vetted by ... PhDs, as researchers. So, if we had graduate assistants helping us, we [as the staff] were always reviewing and reviewing the research evidence and suggesting additional research evidence that might enhance the argument for the practice.”

According to the GGED website, GGED staff overwhelmingly have advanced degrees. However, being able to apply the research lens is only one part of what is needed to do this work. Because intermediaries are often composed of “science-minded journalists or publicly-minded scientists,” GGED staff also explained how the process of synthesizing needs to meet the needs of their audience, as described by one staff member: “[We need] to understand that [research] world, but also know what our audience needs and wants in a language that they speak as well.”

Evaluating credibility of evidence

Synthesis for GGED involves evaluating research credibility, including study design, data source, and generalizability of findings. Staff described this process to include dialogue across their work teams to gauge the credibility of the research evidence. They emphasized peer-reviewed journals and the “assumption that once a piece of research has gotten past a certain point [in peer review], it has a certain degree of credibility or validity.” Beyond publication in a peer-reviewed journal, staff also discussed the importance of considering a variety of factors related to the outlet, such as impact factor, citation counts, as well as the topic and scopes of journals situated across different fields of science (e.g., developmental science, psychology, sociology).

Evaluation of research also included the credibility of study designs. Staff described a prioritization and preference when selecting evidence to translate: “We’re looking, for the most part, more quantitative, empirical, often more experimental findings.” To them, the more rigor a study has, the greater the confidence these intermediaries had in translating the findings. Staff described a characterization of randomized-controlled trials (RCTs) and quantitative studies as more rigorous and, therefore, more credible than qualitative studies; this reflects commonly held hierarchies of evidence and the tensions around rigor in social science research more generally.

Their final consideration of evaluating research related to the generalizability of findings. Many study components contribute to generalizability, such as having a large and diverse sample across many diverse contexts and settings (e.g. rural, sub-urban). As one participant stated:

If the sample size of the study is small, and it's only in let's say the school that the study researchers have a personal connection to like, we know, to take the findings of that study with a grain of salt. We want to make sure that when we cover a study, not only is it large enough, but that it can moderately represent the kind of school demographics as a whole.

Translation

Drawing on experience as educators

While GGEEd staff reported relying heavily on their research background for the synthesis process, they also spoke about their practical, lived experience in schools when discussing the translation process. Every staff person interviewed talked about their experience in classrooms or schools in connection to the work of translation, as illustrated by one interviewee:

We've all been educators, and [it] is absolutely critical that you know what it is to be in a classroom. You know what it is to try to follow a lesson, to try to follow practice, what people need. You're thinking from the point of view of a principal, from a point of view of an educator.

Similarly, GGEEd's website describes an inherent reliance on the educator lens, asking translators to document "precisely how people can go about incorporating this practice or principle into their life" (WFU webpage).

Interviewees described how the translation process is "actually really difficult," as it tends to require the expertise of a "practitioner with a lot of solid knowledge." As one staff person aptly described, "there are plenty of researchers with comprehensive knowledge of a particular field who have a hell of a time translating that in written form." Indeed, for these staff members, wearing their proverbial "teacher hat" facilitated their translation process. One staff person described it as teacher "intuition," by knowing what it is like to "stand in front of that class at 9:00 a.m. on Monday morning."

Additionally, GGEEd staff described holding certain questions in their minds as they translated, such as, "If I were [still] a teacher, what would I actually do with this right now?" and, "How are you going to actually introduce this to students?" In this way, the process was much more than just a professional task; rather, it was a "very personal" endeavor in which staff returned to their time as classroom teachers, discussing their passions for education and improving schooling experiences. One staff person describes this passion as a "bias" carried into the translation process:

I do have that teacher [and] educator lens, that's just me. I've always been passionate about who the teacher is, whether they can teach, who they are, and whether they feel supported in their work.

Because if they're able to embody wellness and practice it themselves, then they are going to create more authentic learning experiences for their kids. So that's the bias I bring.

However, rather than being a bias that is viewed as clouding the staff's judgments, this lens is clearly viewed as informing the translation process by enabling the staff to consider the educator's experience.

Writing in a non-academic voice

Interviewees also spoke about how translation revolved around the art of writing for a non-academic audience. Staff discussed how “translators” of research evidence needed skills to distill complex research into user-friendly language. The *Writing Guidelines* outline to “check that ‘academic jargon’ has been translated into non-academic language”. These skills included being able to process and digest the language of research evidence, or “academic speak,” into language for a lay audience, as illustrated by one staff member:

[We] still are aware of terms that could seem esoteric and potentially off-putting or alienating, jargony, and then [we] also know the kind of language and needs that folks who are not academics, but interested in these topics, you know, might really resonate with.

Knowing research terminology allowed staff to do the work of “sharpening and narrowing and simplifying” and “really vetting” the “flowery academic language.” One critical element of this process is honing the written voice. One staff person describes how long it took to develop the skills to write for an educator audience: “[It took a decade] practicing the voice that it takes to translate that research into writing for a very non-academic audience. It's like a skill that I think is really important when writing for teachers.”

How does this process unfold for the staff? For many, it was an iterative process of deeply engaging with the research evidence and then going through multiple stages of writing. One staff member explained:

It takes one stage of simply putting it in your own words for yourself. And then a whole second stage of actually then sharpening, homing in on the one or two sentence explanation, because it's usually too wordy, the diction is too academic when you're just paraphrasing.

Staff used words like “challenging” and “difficult” to describe the translation process. As one staff person noted: “I had no idea how challenging it would be, even though I'm, you know, a fairly skilled writer, to actually [translate] original research for the general public.”

Generating turnkey strategies

When discussing the translation process, GGED staff also spoke about their commitment to translating “science into action.” Rather than just developing plain-language explanations of the science syntheses, the staff focused their translations on developing implementation-ready, concrete actions for educators. On a literal level, staff discussed breaking complex ideas down into manageable steps and offering relevant

and feasible suggestions to implement in a classroom context. GEd practices have “strong practical implications” and offer lessons that readers can “start applying to their lives” (R: WFU webpage). Staff members discussed how they seek to create “turnkey strategies,” a pedagogical strategy that can be received and then quickly turned around and applied “without a lot of training, without a lot of extra information.” For these staff members, creating turnkey strategies was the work of translating. As part of this process, staff talked about continually revisiting a central question of “What does this look like in a school setting?”

To operationalize this question, staff talked about creating concrete examples based on the research evidence. One section of the R: WFU webpage elaborates on this idea:

[Practices] should be solutions-oriented ... our coverage should point to a constructive way of dealing with problems ... What are the effects and benefits of this practice, according to research; and precisely how people can go about incorporating this practice or principle into their life ... (R: WFU webpage)

One staff person explained: “Providing school examples to enhance your explanation of why this [research] is important ... adding really practical school examples.” To do this, staff described crafting a narrative that educators could see themselves in: “[We’re] trying to put a story together, while always keeping in mind: How can a teacher pick this up and take this and run with it? And what’s most practical for them?”

“Running” with the suggestions often meant translating the evidence very straightforwardly. For example, staff discussed that they imagine explaining concepts to a layperson: “[We try to] write as if you’re explaining this concept to your grandmother, who knows nothing about it ... translating it in a way that could actually be used.” While another discussed, “That whole idea of ‘can a teacher take it and use it tomorrow or Monday morning?’ Or ‘could a principal take this practice and utilize it in a meaningful way in a staff meeting next week?’” This sometimes required extrapolation from the evidence. For example, one participant discussed translating the research evidence on wellbeing topics:

[We’re] not just producing content that explains the “what” and the “why” of concepts ... but getting even deeper into the “how.” How do you do this? How do you apply it in your work? And then how do you respond to challenges or questions that might come up when you try to do that?

The authors found that GEd’s internal templates also facilitate translation. Once staff organized their work into these templates (e.g., *Template and Document*), it then became part of the website for end users to engage with: “[The template] includes a reflection for the educator before the practice, how to do it, a reflection after the practice, why do it in the first place, and then what is the research evidence behind it.”

Discussion

The “who” alongside the “how”

Extant research has found that intermediaries sit partially inside and partially outside of the practitioner space (Honig, 2004) due to their understanding of multiple worlds

(Sharples & Sheard, 2015; Monod-Ansaldi, Vincent, & Aldon, 2019; Olejniczak, 2017; Rycroft-Smith, 2022). This study elaborates on how two lenses are maintained simultaneously. The analysis found that GGEEd draws from its understanding of both research and practice to distill research evidence. When GGEEd staff considered *how* they engaged in distillation, they centred on *who* they were: their lived experiences, academic and professional backgrounds, past and present roles, and how these identities shape their processes. Staff at GGEEd relied heavily on their “research lens” when synthesizing research evidence and heavily on their experience as *educators*—their practical experience as teachers and school leaders—when translating research evidence into applicable, user-friendly language for other educators to use. This finding is consistent with previous literature identifying how intermediaries “bridge the gap” by understanding the context of complex research and the practical knowledge around concrete implementation (Sharples & Sheard, 2015).

We note that holding these two lenses of research and practice was not always synergistic, as “brokers must make choices relative to what to feature” (Malin et al., 2018, p. 10). For example, while GGEEd discussed considering broad and diverse disciplinary perspectives, they also spoke about the hierarchies of evidence most common in medical research. They discussed reflecting on their biases, seeking deeply contextual knowledge claims, as is common in qualitative research, and prioritizing the large, diverse, and generalizable samples to which one aspires in quantitative research. To manage these tensions, they repeatedly referred to three strategies. First, they relied heavily on the reputation of their sources, electing not to synthesize and translate doctoral dissertations, for example, but peer-reviewed pieces in what they deemed reputable outlets. Additionally, staff described relying on what was popular (e.g., impact factors) as a starting point for assessment. Third, they benefited from a social sense-making process, discussing research with their team to come to final appraisals. This brings the themes of trust, resonance, and sense-making, commonly discussed in the knowledge brokering process, further upstream in the process than typically applied.

Finally, GGEEd staff noted that distillation requires its own unique skill set above and beyond research training and experience as an educator. Borrowing on journalism and other forms of storytelling, one GGEEd staff member estimated it took them a decade to refine their craft. Perhaps this is because, as Malin et al. (2018) find, if brokered knowledge is not practical or applicable, “it will likely be ignored” (p. 10). Thus, the unique people who fill these positions and the aggregated career experiences on which they depend implore the field to consider whether constraints around the number of people prepared and paid to engage in the distillation of education research, in turn, constrains the potential use of research evidence in practice and policy.

Elaborating on the interactive systems framework heuristic

The findings of this research suggest two elaborations on the ISF heuristic: 1) render the “synthesis” and “translation” boundaries less rigid, and 2) expound on the bridge directly connecting the Distillation System to the Delivery System. First, we note that GGIE staff referred to their research skills in the process of *translating* and to their educational experience in the process of *synthesizing*. This is one of several ways

synthesis and translation blurred boundaries, seeming less like discrete steps and more iterative and integrative, guided by a predetermined, downstream purpose. Along these lines, it may be an oversight to think of synthesis as an “objective” process before translation—rather than strategically using research evidence grounded in an anticipated use scenario.

Second, intermediaries who create knowledge reservoirs function as a bridge connecting the Distillation System to the implementation support system and directly to the delivery system. Prior elaborations of the ISF (Wandersman et al., 2012) emphasize how the “evidence-based systems for innovation support (EBSIS)” function as a bridge between the Support System and the Delivery System. Such EBSIS mechanisms include tools, training, technical assistance, and quality assurance processes. Yet, the Distillation System also creates tools (i.e., resources that assemble, sum up, and/or pass on evidence-based knowledge for implementation, including websites, pamphlets, manuals, checklists, and templates) in the process of translation.

Strengths and weaknesses

This study aims to expand the literature on the processes that intermediaries employ to synthesize and translate research evidence for educators. The qualitative nature of the study generated rich detail about how the processes unfold at the organizational level of one such intermediary. However, this study is not without limitations. It is possible that an exploration of other cases would yield different themes about processes for distillation. For example, this intermediary is situated within a university setting, which may have implications for the kinds of robust synthesis and translation they do. We also acknowledge that the process does not end with synthesis or translation. Though not core to our study aims, the processes of *curation* and *packaging* may also be an important part of intermediaries’ process for brokering research evidence for educators. Future studies may elect to take up questions about how intermediaries curate and package content for use.

Implications

In many ways, this study contributes to notions of the “pipeline fallacy” of knowledge dissemination (Green, 2008); herein, the authors acknowledge that the pipeline connecting research and practice is not only leaky but also filtered. Although prior discussions have considered the ways in which knowledge is constrained through funder priorities and peer review processes, we observe additional (desirable) ways this occurs through the synthesis and translation processes of intermediaries. We observe knowledge brokering to be deliberately interpretative, such that the evidence that enters the Distillation System is not the same evidence that comes out. This transformation renders the transformed evidence more accessible and relevant for practitioners and policymakers to pull into their work. The process described by our partners is repeatedly referred to as storytelling. Rather than using an industrial age pipeline to pass along *what we know*, they describe a sociocultural process in which each story has guidance for *how to be* or *what to do*.

If education researchers become more knowledgeable about what questions are asked of their research, more information may be included in their primary write-

ups and supplementary materials to facilitate distillation. Including more of this information in the research could help facilitate distillation processes that optimize the integrity of the discovery and relevance to the application.

Ultimately, understanding the role of intermediaries in the distillation of research evidence is the first of many steps to consider the role of knowledge reservoirs to improve the use of research evidence in practice and policy. Next, we need to understand how these intermediaries engage in their own continuous improvement: how do they determine if their process is contributing to research use and, ultimately, improving the lives of young people? How do intermediaries build feedback loops, find traces of their work in support and delivery systems, and adjust their efforts to optimize research use? Additionally, what other types of evidence and knowledge are being integrated into these processes? This article explores how intermediaries distill information, but we have much more to learn about the role of education intermediaries in synthesizing and translating research evidence for practice and their role in shrinking the gap between research and practice/policy.

Acknowledgements

The authors thank the William T. Grant Foundation Scholars Program (190407) for their financial support. We also thank Kaitlin Paxton Ward, the members of the Writing for Youth Wellbeing team, specifically Nehal Eldeeb; Undergraduate Research Apprentices, Jacqueline Richards, Nella Batah, and Mihika Balaji; and Claire Shintani and Isabelle Trujillo.

Note

1. All interviewees, and the Greater Good Science Center leadership, consented to the organization being named in this publication.

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