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# How do Educators Use Evidence to Inform Decision-Making in Australian Early Childhood Education and Care Settings? A Qualitative Interview Study

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## Abstract

While evidence-based practice is linked to improved quality in early childhood education and care (ECEC) settings, limited research examines how early childhood (EC) educators understand and use evidence in practice. The aim of this qualitative descriptive study was to gain insights into how EC educators in Australia use evidence to develop and/or enhance their programmes, practices and decision-making. Thirteen EC educators from diverse ECEC settings across Australia took part in semi-structured interviews to explore their perspectives on using evidence. Findings revealed diverse understandings of “evidence-based practice” ranging from practices grounded in research to those based on personal judgments. While research evidence was valued, there was a strong emphasis on using educator-generated evidence from observing children’s responses, along with drawing on multiple sources including online materials, feedback from families, and advice from other professionals. Key enablers to evidence use included supportive leadership, a shared service vision, professional learning opportunities, and systemic supports including time and resources. Barriers included resistance to change, workforce challenges, and lack of data literacy skills. The findings highlight the need for clearer conceptualisations of evidence use in early childhood education, effective research translation strategies, whole-service approaches, and professional development tailored to educators’ diverse qualifications and experiences. A multifaceted approach considering systemic factors is needed to bridge the research–practice gap and embed evidence-based practices across the early childhood sector.

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## Résumé

Alors que les pratiques fondées sur des données probantes sont liées à l'amélioration de la qualité des structures d'éducation et d'accueil de la petite enfance (EAJE), peu de recherches examinent la manière dont les éducateurs de la petite enfance (EA) comprennent et utilisent les données probantes dans la pratique. L'objectif de cette étude qualitative descriptive était de comprendre comment les éducateurs de la petite enfance en Australie utilisent les données probantes pour développer et/ou améliorer leurs programmes, leurs pratiques et leurs prises de décision. Treize éducateurs de divers établissements d'accueil de jeunes enfants en Australie ont participé à des entretiens semi-structurés afin d'explorer leurs points de vue sur l'utilisation des données probantes. Les résultats ont révélé des interprétations diverses de la « pratique fondée sur des données probantes », allant de pratiques fondées sur la recherche à des pratiques basées sur des jugements personnels. Si les données issues de la recherche sont appréciées, l'accent est mis sur l'utilisation de données générées par les éducateurs à partir de l'observation des réactions des enfants, ainsi que sur l'utilisation de sources multiples telles que les documents en ligne, les commentaires des familles et les conseils d'autres professionnels. Les principaux éléments facilitant l'utilisation des données probantes sont le soutien des dirigeants, une vision commune des services, des possibilités d'apprentissage professionnel et des soutiens systémiques, notamment en termes de temps et de ressources. Les obstacles comprennent la résistance au changement, les défis liés à la main-d'oeuvre et le manque de compétences en matière de données. Les résultats soulignent la nécessité de conceptualiser plus clairement l'utilisation des données probantes dans l'éducation de la petite enfance, de mettre en place des stratégies efficaces d'application des résultats de la recherche, d'adopter une approche globale des services et de mettre en place un développement professionnel adapté aux diverses qualifications et expériences des éducateurs. Une approche multidimensionnelle tenant compte des facteurs systémiques est nécessaire pour combler le fossé entre la recherche et la pratique et intégrer des pratiques fondées sur des données probantes dans l'ensemble du secteur de la petite enfance.

## Resumen

Aunque las prácticas basadas en la evidencia están vinculadas a la mejora de la calidad en los entornos de educación y atención a la primera infancia (EAPI), son escasas las investigaciones que examinan cómo los educadores de la primera infancia (EAPI) entienden y utilizan la evidencia en la práctica. El objetivo de este estudio cualitativo descriptivo era entender cómo los educadores de la primera infancia en Australia utilizan la evidencia para desarrollar y/o mejorar sus programas, prácticas y toma de decisiones. Trece educadores de diversos entornos de la primera infancia en Australia participaron en entrevistas semiestructuradas para explorar sus puntos de vista sobre el uso de la evidencia. Los resultados revelaron diversas interpretaciones de la «práctica basada en pruebas», que van desde las prácticas basadas en la

investigación hasta las basadas en juicios personales. Aunque se valoran las pruebas basadas en la investigación, se hace hincapié en el uso de datos generados por los educadores a partir de la observación de las reacciones de los niños, así como en el uso de múltiples fuentes, como materiales en línea, comentarios de las familias y consejos de otros profesionales. Entre los principales facilitadores del uso de pruebas se encuentran el apoyo de los líderes, una visión compartida de los servicios, oportunidades de aprendizaje profesional y apoyos sistémicos, como tiempo y recursos. Entre los obstáculos figuran la resistencia al cambio, los problemas de personal y la falta de conocimientos sobre datos. Los resultados ponen de relieve la necesidad de una conceptualización más clara del uso de pruebas en la educación infantil, de estrategias eficaces para traducir los resultados de la investigación, de un enfoque holístico de los servicios y de un desarrollo profesional adaptado a las diversas cualificaciones y experiencias de los educadores. Se necesita un enfoque multidimensional que tenga en cuenta los factores sistémicos para salvar la distancia entre la investigación y la práctica, y para integrar las prácticas basadas en pruebas en todo el sector de la primera infancia.

## Introduction

There is growing consensus that an evidence-based approach to inform pedagogical decision-making across all education settings is critical to support teacher effectiveness, programme quality and ultimately improving child and student outcomes (Masters, 2018; Stahmer et al., 2018; Taylor & Boyer, 2020). In education, evidence-based practices can be broadly defined as teaching practices and approaches that are supported by robust empirical research as well as informed by professional and family knowledges and values, across diverse contexts and child or student populations (Buisse et al., 2006; Ramia et al., 2023). Practitioners and policy-makers are increasingly interested in the use of evidence-based practices in education settings due to the innumerable potential benefits they can deliver (OECD, 2022; Pellegrini & Vianet, 2021; Wilcox et al., 2021). A number of factors have been identified as common enablers or barriers to the use of evidence-based practices in education settings (Clinton et al., 2023; Dagenais et al., 2012; Hemsley-Brown & Sharp, 2003). For example, in Australia, recent research has explored school teachers' and leaders' attitudes and use of evidence, finding enthusiasm for engaging with research evidence, but also a range of barriers encountered, including difficulties accessing relevant high-quality research; contextual adaptation challenges; and support sustaining evidence use over time (Gleeson et al., 2022; Parker et al., 2020; Prendergast & Rickinson, 2019; Rickinson et al., 2020, 2021; White et al., 2018). Recent evidence suggests that a significant disconnect persists between education research and educator practice (Conaway & Goldhaber, 2020; Stanovich, 2003; Wiliam, 2019), partly due to lack of clarity around definitions, debates over research methodologies, and inconsistent translation of research to support effective and sustained use of evidence in diverse education contexts (Boyd et al., 2016; Hemsley-Brown & Sharp, 2003; Owen et al., 2022). Moreover, while the research–practice gap has been extensively explored in school settings, research

examining early childhood (EC) educators' views and practices regarding evidence use remains scarce (Yazejian & Bryant, 2013). Here we use the term 'EC educators' to include all professionals in early childhood education, such as educators, teachers and educational leaders, which contribute to the learning and development of young children. Therefore, the aim of the current study was to gain insights into how EC educators perceive evidence-based practice, and how they use evidence to develop and enhance their programmes, practices and decision-making.

## Evidence Use in Early Childhood Education

There has been a notable increase globally in government policies and initiatives aimed at promoting the use of evidence-based practices to enhance the quality of early childhood education (Farley et al., 2018; Purper, 2016). This trend reflects a growing recognition of the importance of integrating research evidence into decision-making to foster optimal developmental outcomes for young children (Nelson & Campbell, 2017; Snyder et al., 2015). However, evidence use in early childhood education and care (ECEC) settings, which serve children from birth to school entry, faces unique barriers. Documented challenges to evidence use in these contexts include: limited applicability of evidence-based practices to diverse ECEC contexts; inadequate time, resources and training afforded to EC educators to implement such practices (Kishida et al., 2021); variability in philosophical approaches to pedagogy, lack of shared vision and ongoing debates about what constitutes 'best practice' (e.g. explicit instruction vs inquiry approach) (Coplan et al., 2015; Jeon et al., 2016); and an overwhelming quantity of evidence-based practices and programmes of variable quality (Buysse et al., 2006; Detrich & Lewis, 2013; Purper, 2016).

Integrating research-based and practice-based knowledge into ECEC settings adds another layer of complexity. The disconnect between research and practice may in part be due to educators infrequently turning to research knowledge to address challenges in practice, while researchers fail to formulate questions or produce findings that are immediately relevant or applicable to EC educators' needs (Buysse et al., 2006). Consequently, distinguishing high-quality, evidence-based programmes from those effectively marketed is extremely challenging (Mattox & Kilburn, 2012; Purper, 2016), particularly when considering the value of both forms of knowledge. In addition, it remains unclear how EC educators should go about finding and interpreting the research that they are encouraged to use, integrating this with their practical experience and accounting for contextual factors, to guide their decisions (Farley et al., 2018).

The complexity of early childhood pedagogy and curriculum decision-making necessitate a skilled workforce employing flexible, responsive approaches to integrate various evidence forms into practice. Studies have considered two main forms of evidence: educator-generated evidence (data generated through daily practice, such as insights from assessments or observations) and research evidence (i.e. academic research) to inform practice (Ramia et al., 2022). However, the

most common sources of ‘evidence’ used by EC educators are reportedly practice-based knowledge, drawing on personal experiences and feedback and advice from colleagues, with these sources often taking precedence over theory and research in the decision-making process (Cooper et al., 2017; Hedges, 2012; Nelson & Campbell, 2017). This preference reinforces the ongoing challenge of bridging the gap between research-based and practice-based knowledge in ECEC settings. In addition, this approach necessitates a shared vision among colleagues and families about what constitutes ‘best practice’, as well as a collective and clearly articulated philosophical approach to developmentally appropriate pedagogy. Research shows that inconsistent knowledges, beliefs and practices amongst EC educators is a common phenomenon in ECEC settings, thus adding further layer of complexity to the research to practice gap (Mengstie, 2023; Wieduwilt et al., 2023).

For decision-making to be effective, evidence suggests that EC educators need to draw on both educator-generated and research-generated evidence (Buysse & Wesley, 2006; Hedge, 2012). Educator-generated evidence can be used to identify children’s specific learning needs and dispositions, while research evidence can inform effective teaching strategies. Combining both types of evidence allows EC educators to evaluate and plan for individual children’s learning progress and promotes EC educator effectiveness (Masters, 2018). Therefore, understanding EC educators’ perspectives on evidence use is crucial, as they must draw upon multiple sources—including observational data, theory, research evidence, and their own knowledge and experiences.

### Qualifications and Training of EC Educators

While extensive evidence shows EC educator qualifications improve ECEC quality and are therefore linked to promoting children’s learning outcomes, wide variation exists both within and across countries regarding the qualification levels required for EC educators. For example, in England, a level 3 vocational accreditation (equivalent to High School Leaving Certificates) is the minimum qualification required to work in ECEC (Mikuska et al., 2023). A number of European countries, such as Finland, Germany and Lithuania, require that at least one member of the ECEC team providing care and education to children 0–5 years has a minimum qualification of Bachelor’s level (European Commission, 2023). Meanwhile, other countries, such as Ireland and Slovakia, have minimum qualification requirements with any age group in ECEC, below Bachelor’s level (European Commission, 2023). In Australia, where the current study was conducted, the minimum qualification to work in ECEC settings is a Certificate III in Early Childhood Education and Care (vocational qualification providing skills and knowledge to work in a range of ECEC settings), while lead educators and teachers typically hold diploma or degree-level qualifications (ACECQA, 2025). In addition to the wide-ranging qualification levels of EC educators, there is significant variability in preservice staff training programmes. As a result, many in-service EC educators may not receive adequate tertiary training in evidence-based approaches, making it a challenge to translate

theoretical knowledge into effective classroom practices (Blewitt et al., 2021; Purper, 2016). Recent recommendations highlight the importance of supportive organisational structures, for example, providing access to evidence-led professional development and supporting school leaders to plan improvements using evidence-based approaches (Gorard et al., 2020; Wiliam, 2019).

## Theoretical Framework

Bronfenbrenner's (1994) ecological systems theory offers a conceptual foundation for understanding the complex dynamics of professional learning and evidence-based practice adoption within ECEC settings. This theory provides a multilayered context for understanding the various influences on EC educators' professional learning and use of evidence in practice, which includes: the immediate environment of the EC educator (microsystem), such as professional learning experiences, interactions with children and families, and relationships with colleagues; the interactions between microsystems, such as the relationships between an educator's professional learning experiences and their practices; the organisational and policy contexts that may indirectly impact an educator (exosystem) such as funding or sector policies; the broader societal and cultural values that shape early childhood education (macrosystem); and the dimension of time, i.e. how time and life events can influence professional learning opportunities and experiences (chronosystem), such as stage of career, and changes over time to societal values and ECEC policies (Bronfenbrenner, 1986; Ho et al., 2023).

## Study Context

Evidence-based practices in ECEC have gained international prominence, with many countries implementing quality assurance systems and frameworks that include the promotion of research-informed practices (OECD, 2022). For instance, in the USA, the National Association for the Education of Young Children (NAEYC) Standards for Early Childhood Professional Preparation provides national professional standards and competencies for EC educators, which were developed in light of both research and professional knowledge. The standards include that educators use knowledge about early childhood development, individual children and learning and development in cultural contexts, to inform decision-making and that effective, evidence-based teaching is enacted through educator-generated evidence informed by ongoing observation and documentation of children's learning progress (National Association for the Education of Young Children, 2020). The UK has a mandatory statutory framework for ECEC providers that includes learning and development requirements. Learning and development requirements are informed by evidence on how children learn and as part of these, educators are expected to draw on their knowledge of an individual child and their own professional judgement to determine a child's learning progression, with educator-generated evidence to support this (Department for Education, 2024).

Similarly, in Australia, this incorporation of evidence-based practices is embedded within a comprehensive regulatory and quality framework. The National Quality Framework (NQF), underpinned by research evidence, consists of National Law and Regulations and a National Quality Standard (NQS) (Australian Children's Education and Care Authority [ACEQA], 2018). The NQF mandates the use of Approved Learning Frameworks, such as the recently updated Early Years Learning Framework (EYLF, V2.0) (Australian Government Department of Education [AGDE], 2022), which incorporates principles reflecting contemporary theories and research evidence about early childhood pedagogy and children's learning. While these regulatory frameworks provide a structure for the use of evidence-based practice, there is no set early childhood curriculum, and the interpretation and use of evidence can vary significantly across different settings and professionals' roles. As such, the implementation of these frameworks and the use of evidence in day-to-day practice can be complex and challenging.

Using a qualitative descriptive approach, this study aims to explore how educators in a range of professional roles and from diverse ECEC settings use evidence to inform practices and decision-making in ECEC settings. Specifically, this study addressed the following research questions:

- (1) How do EC educators define evidence use?
- (2) How do EC educators use research evidence and educator-generated evidence?
- (3) What are the barriers and facilitators to using and implementing evidence-based practices in ECEC settings?

## Methods

This study utilised a qualitative descriptive design to explore via semi-structured interviews how Australian EC educators use evidence to support practices and decision-making. A qualitative descriptive methodology was deemed appropriate as it is used to provide a comprehensive summary of events or experiences, focusing on the 'who, what, and where' of experiences, committed to studying phenomena in their natural state (Sandelowski, 2000). This approach aligns with the exploratory nature of the research questions and the emphasis on capturing participants' perspectives, given the scarcity of research detailing EC educators' views regarding evidence use.

Ethical approval was provided by the Bellberry Human Research Ethics Committee (no.: 2021-07-817-A-3). Research approval was also sought from state education jurisdictions, where appropriate. Participation was informed and voluntary and required written consent.

## Sampling

In line with qualitative descriptive methodology, purposeful sampling was employed to ensure the inclusion of participants from particular categories (such as different

**Table 1** Example of coding framework

Key theme	Subthemes	Codes
Diverse definitions of evidence-based practice	Research evidence Educator-generated evidence	<ul style="list-style-type: none"> <li>● Informed by research evidence, academic</li> <li>● Observation-based or own-generated data</li> <li>● Misunderstanding of evidence-based practice</li> <li>● Evidence gathered through appropriate procedures</li> <li>● Evidence supported by assessment</li> <li>● Evidence that improves educator efficiency</li> <li>● Evidence that supports child learning</li> <li>● High-quality evidence with observable benefits</li> </ul>

ECEC roles) based on the theoretical understanding of the topic of interest, aiming to capture diverse and rich perspectives on the phenomenon being studied (i.e. use of evidence in ECEC settings) (Bradshaw et al., 2017; Robinson, 2013). The sampling strategy aimed to capture a range of experiences across different ECEC contexts. ECEC services were selected intentionally to include diverse service types, sizes, locations (state and metropolitan/regional/rural), and socio-economic status (using the ABS Socio-Economic Indexes for Areas [SEIFA] Index of Relative Socio-Economic Disadvantage score for ECEC services). National Quality Standard (NQS) ratings were also considered, and we sampled services using the Australian Children's Education and Care Quality Authority (ACECQA, 2018) national register. Sample size was determined by data saturation, whereby a point of saturation was achieved, where no new themes or insights were identified from the data, indicating sufficient depth in findings (Bradshaw et al., 2017).

## Recruitment

Centre Directors were emailed project details and a consent form inviting their service to participate in the study. Upon receipt of written consent from Centre Directors, potential participants from the service who volunteered to be contacted, were invited via email by the research team to take part. Potential participants were provided with a Plain Language Statement detailing what participation would involve, participant risks and benefits, what data would be collected, how it would be stored and used and the completely voluntary nature of the study. Participants were also provided with a link to a Qualtrics online consent form. Once consent was provided, online interviews were arranged via email. Upon completion of the interview, participants were provided with an educational resources gift voucher as compensation for their time.

## Data Collection

Data collection occurred from March-October 2022. All interviews were conducted online via Zoom. Semi-structured one-off interviews lasted 30–40 min and included questions about the ways educators think about and use evidence (see Appendix A:

Interview Schedule). The interview schedule was developed by the research team and informed by the literature on use of evidence in education settings, as well as the national framework used to guide educators' quality practice. The interview schedule shown in Appendix A, included a definition of evidence that the researcher provided to the interviewee to contextualise the term: defined broadly as anything used to support claims about the effectiveness of a particular educational practice, programme or policy; evidence can come from assessments and observations, such as the evidence you might collect yourself in your room, which we call 'practitioner-generated evidence'; evidence might be research/academic based, such as recommendations from books or findings from research, which we call 'research evidence'. With participants' consent, interviews were recorded via Zoom and transcribed verbatim using a transcription service.

## Data Analysis

Braun and Clarke's (2019) method of reflexive thematic analysis was employed to analyse the transcripts and derive overarching themes from the data through an inductive, iterative process of coding and interpretation. Firstly, the first authors independently engaged with the raw data, reading and re-reading transcripts to establish data familiarisation. Second, these authors independently generated initial codes for the first half of the transcripts, using a data-driven approach to capture interviewee's views by assigning a word or short phrase to a passage of data (Xu & Zammit, 2020). Next, they met to discuss, refine and reach consensus on the codes, which were then applied to the remaining transcripts. Once coding was completed, all members of the research team met and participated in reviewing the codes and collaboratively identified overarching themes and subthemes (see Table 1). This process was iterative, as themes and subthemes were refined through discussion.

**Table 2** ECEC site characteristics and interviewees

Service type	Geolocation	SEIFA	NQS rating	Interviewees
Kindergarten	Major city	5th quintile	Exceeding	Director Educator
Kindergarten	Major city	1st quintile	Meeting	Kindergarten teacher
Long Day Care	Outer regional	1st quintile	Exceeding	Kindergarten teacher/Ed leader Educator
Kindergarten	Major city	5th quintile	Meeting	Director
Kindergarten	Outer regional	3rd quintile	Exceeding	Kindergarten teacher
Long Day Care	Major city	3rd quintile	Exceeding	Director Kindergarten teacher
Long Day Care	Remote	2nd quintile	Exceeding	Director/Ed leader
Long Day Care	Inner regional	1st quintile	Working towards	Director Ed leader
Family Day Care	Inner regional	4th quintile	Working towards	Field coordinator (previously LDC educator)

**Table 3** Key Themes and Subthemes from EC Educator Interviews

Research Question	Key themes	Subthemes
How do EC educators define evidence use?	1. Diverse definitions of evidence-based practice	Research evidence Educator-generated evidence
How do EC educators use research evidence and educator-generated evidence?	2. Using multiple sources of evidence	Online sources of evidence Evidence from children, families, and trusted professionals
	3. Applicability for children and context	Importance of observing children's responses Alignment with teaching philosophy and context
	4. Using evidence to make improvements or address gaps in knowledge or practice	Using evidence to make improvements to practice Using evidence to address gaps in knowledge or practice Using evidence to support professional conversations
	5. Organisational barriers and enablers (leadership, culture and infrastructure)	Supportive leadership and infrastructure Professional learning and networking Shared vision with colleagues and families
What are the barriers and facilitators to using and implementing evidence-based practices in ECEC settings?		

Although we used an inductive, data-driven approach to analysis, concepts from ecological systems theory and implementation science were considered to support the interpretation of the findings.

Our research team included members with expertise in early childhood research and early childhood education, providing both perspectives as EC professionals and EC researchers. We recognise that our roles as researchers may have influenced participants' responses, potentially creating bias towards more positive reflections on evidence-based practice. To mitigate this, interviewers reinforced that there were no right or wrong answers, and we encouraged participants to share their honest experiences and perspectives. During team discussions we challenged our assumptions and interpretations, ensuring findings represented participants' voices, rather than our preconceptions.

To ensure rigour, strategies employed included: triangulation via all members of the research team participating in reviewing the coding and thematic analysis and providing feedback; maintaining records of the coding process, theme development and analytic decisions; and reflexivity, whereby the research team engaged in self-reflection of their own perspectives and potential biases.

## Findings and Discussion

### Participants

Thirteen EC educators from various roles were interviewed, although most participants were in teacher ( $n=3$ ) or leadership ( $n=7$ ) roles and with higher qualification levels. Participants were also from a range of ECEC service types (kindergarten, long day care and family day care services), geographical locations (metropolitan, regional, rural and remote), National Quality Standard (NQS) ratings (ECEC services are assessed and given an NQS rating ranging from 'Significant Improvement required' to 'Excellent' by their state and territory regulatory authority) and socio-economic areas (indicated by Socio-Economic Indexes for Areas Australia (SEIFA), which ranks areas according to their relative socio-economic advantage and disadvantage using Census data) (see Table 2).

### Key Themes and Discussion of Findings

The current study explores the perspectives of 13 EC educators from diverse service types and geographical locations across Australia to understand their experiences of evidence use in practice. The overarching themes conceptualised from the interview data and how they relate to the research questions are presented in Table 3. The following section details the key themes derived from our analysis of the data and a discussion of the implications of findings. Examples of participants' voices are used throughout to elucidate how EC educators use evidence to develop and/or enhance their programmes, practices and decision-making.

Drawing on Bronfenbrenner's ecological systems theory, the overall findings are conceptualised below to demonstrate the key influences on educators' use of evidence. As can be seen in the figure, the findings highlight the central influences of multiple sources of evidence, which are inextricably linked to educators' underlying beliefs about children's learning and development, and their real-time observations and responses to children's behaviours.

### Diverse Definitions of Evidence-Based Practice

Despite a diversity of service types, roles and locations represented in the current sample, there was convergence in the main ideas and perspectives expressed, suggesting commonalities in educators' experiences regardless of their specific role and context. The findings overall demonstrate that both research evidence and educator-generated (or practice-based) evidence were valued by most participants, and that they were inextricably linked; i.e. educator-generated evidence was an extension of knowledge derived from research evidence, and research evidence was sought in response to educators' direct observations of children (educator-generated evidence). This contrasts with previous suggestions that EC educators tend to prioritise personal experience over research evidence (Hedge, 2012). Our findings

also revealed occasional variations in understandings and definitions of evidence-based practice among EC educators—ranging from practices based on current, reliable research to those based on personal judgement and experience, such as ‘gut’ feelings, as expressed by one participant (ID 200, kindergarten teacher).

## Research Evidence

Centre Directors identified evidence-based practice as being informed by research, academic papers and studies. They demonstrated an awareness of reliable sources and highlighted the importance of robust research and review processes. For example, stating ‘it’s been researched and studied, peer-reviewed, and considered current best practice (ID500, Director). Directors referred to evidence-based practice being informed by ‘more formal academic research, so whether or not we’re using articles from peer-reviewed journals or things like that’ (ID803, Director), and highlighted the trust they invested in practices informed by research: ‘we know that it’s based around an accumulation of theories and it’s really well-researched and that there was a lot that went into it, and that it’s updated from time to time, things will change.’ (ID500, Director). Another educator spoke to how research evidence had informed the development of policy documents and national standards that underpin their everyday practice: ‘studies around the Early Years Learning Framework, understanding the information that has gone into the standards and the national law and the national regulations’ (ID502, educator).

Participants also defined evidence-based practice by what it is not: ‘like word of mouth or that kind of thing... someone might just have like a mum’s blog or something like that, would be more opinion based rather than evidence-based’

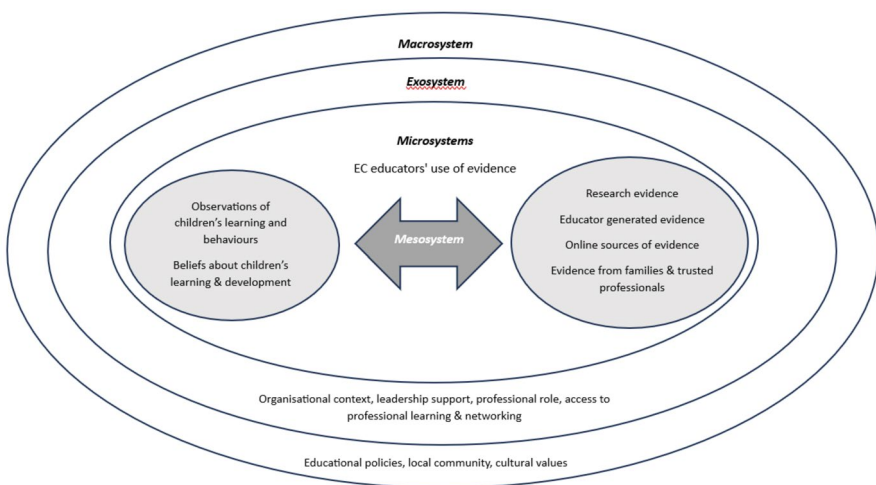


Fig. 1 Conceptual framework of educators' evidence use

(ID200, teacher). One EC educator saw it as *'more of that concrete stuff that's not teacher judgement'* (ID201, teacher). In contrast, another viewed it as innately incorporated into their daily practice through accumulated professional knowledge and experience: *'these are things that we do naturally every day, those kinds of things, I think every part of planning that is evidence-based to some point, things that's accumulated over the [years], all your knowledge accumulates...'* (ID200, teacher).

### **Educator-Generated Evidence**

While recognising research evidence value, several participants spoke to the importance of educator-generated evidence to meet the needs of children within their specific contexts. This was described as data collection assessing effectiveness across age groups or specific groups, involving *'quite a lot of reassessing and review'* (ID801, Director/teacher). EC educators expressed collecting their own evidence to assess teaching practice effectiveness in their ECEC contexts. A Director reflected on the need to observe different approaches' impact and make adaptations if required: *'seeing if it works for the group of children and the dynamics that we have. Then if it doesn't, go back to the drawing board.'* (ID301, Director).

### **Using Multiple Sources of Evidence**

Most participants described accessing multiple evidence sources to inform practices and decision-making, such as online/social media platforms, academic sources, feedback from families, and conversations with other professionals. As one teacher stated: *'there's so many different ways that we and children learn, I'm not really sure there's anything in particular that I could think of that wouldn't be evidence-based.'* (ID201, teacher). In this way, educators use of evidence was primarily driven by their relationships and observations of children, but also shaped by their own experiences and belief systems, organisational and policy expectations, and the interactions between these systems (Tudge et al., 2017). From an ecological perspective, educators' use of evidence in practice was chiefly influenced by their unique microsystem, and more specifically, the interconnected and unextractable relationship between their observations of children and their own professional learning experiences and beliefs (see Fig. 1).

### **Online Sources of Evidence**

Most interviewees noted using the internet, from Google and social media to academic sources, as a quick and convenient way to source evidence. An educator stated: *'I love it that we've got Google now... you can just Google whatever you want and up it comes.'* (ID800, educational leader) A Director described a less proactive approach, stating: *'I'll only go looking for it (research) if there is a need.'*

(ID300, Director) Another educator mentioned using simple and brief articles from websites like Early Childhood Australia (ECA) and Nature Play SA *‘to get people talking, and then other times, it might be more about engaging in a project or an organisation.’* (ID804, educational leader). Educators also described intentionally accessing *‘trusted’* sources like ACECQA [Australian Children’s Education and Care Quality Authority] or professional journals over *‘classic Wikipedia sort of things’* (ID1801, Director/teacher). A Director reiterated the importance of using reliable, academic sources, from trusted professional organisations: *‘We also are lucky enough to have a number of staff who are currently studying at [university] ... so we have access into [university] databases’* (ID803, Director).

Most interviewees referred to a heavy reliance on online sources. However, while they provide a wealth of easily accessible information, it can be hard to distinguish quality evidence-based practices (i.e. approaches or interventions that have been rigorously tested and shown to be effective through well-designed studies) from those that are solely marketed well (i.e. those that are popular or widely promoted but lack substantial empirical support). Therefore, effective research translation, accessibility and marketing of credible sources need to be a focus for researchers, government agencies and sector organisations to support educators in sourcing reliable evidence. Importantly, these learning opportunities also need to focus on improving data literacy skills for all educators. Given the well documented time constraints on educators and the complexity of their work (Logan et al., 2020), providing convenient access to reliable, and easily digestible sources of evidence is essential.

### **Evidence from Children, Families and Trusted Professionals**

Many interviewees spoke of collecting evidence from allied health professionals and families, and drawing on their own professional experiences. In this way, participants referred to their use of evidence as influenced by their mesosystem, or the network of microsystems that represents the connections between microsystems such as interactions between educators and families, and interactions between educators and other professionals.

*‘There can be your own personal experience that you gather information and evidence, and then there’s the OT [Occupational Therapist] might say something to us... then the speech... and then how we implement is a combination of all different things. Or we might read an article in an Every Child magazine’* (ID301, educator).

Another EC educator highlighted gathering different perspectives: *‘When you’re gathering the evidence, it’s not just your own... you are gathering from more than one place. So you’re gathering from families. If we’ve got children that are with inclusion support, we also have speech pathologists that we talk to, OTs that we talk to’* (ID501, educational leader).

Seeking family feedback on implementing new practices was identified as important for introducing and sustaining evidence-based practices. Collecting family

evidence also informed pedagogical decision-making and identifying children's learning goals: *'using some of that child voice and family voice and part of our community voice as an evidence base to make decisions about our service or about our pedagogy or our curriculum.'* (ID803, Director).

Frequent child observations and consultations drove many educators' practice: *'We use things like floor book style, sketchbooks and things with children... to really nut out some of those children's theories and thoughts about things, conceptual understandings of things and their interests and use that as a base to guide some of our curriculum decision-making.'* (ID803, Director) Conversations with children informed programme planning based on children's expressed interest of their responses to practices informed their programme planning: *'I would take that as my evidence as to that week's planning, what they have verbally expressed to me that they would like to focus on for the week.'* (ID202, educator).

### **Applicability for Children and Context**

For the educators in this study, their observations of children's responses to evidence-based practices and the applicability of practices for their service were key factors determining the reliability, acceptability and sustainability of new practices: *'[the] purpose might not really fit with either our philosophy or who our children are. That's why I like to test things out. It might look really interesting, but I'll see if it actually works or is applicable.'* (ID804, educational leader).

### **Importance of Observing Children's Responses**

For most of the educators in this study, there was an emphasis on the value of practice-based evidence derived from observations of children. In fact, most participants agreed that their implementation of evidence-based practices was contingent on children's engagement with evidence-based strategies: *'how do I know that that [practice] works? Because I've observed the children and their responses over time.'* (ID400, Director). From an ecological systems lens, the educators' practices and use of evidence thus appear to be significantly influenced by their interactions with children, who are at the centre of their decision-making. Children's responses and observed changes in their behaviour and growth indicated if evidence was reliable and worth implementing. An EC educator stated, *'If it's getting the desired impact and the desired growth, that's huge'* (ID801, Director/teacher). Another EC educator was more likely to implement a practice if it enhanced children's outcomes, like *'mindfulness... I suppose that's evidence-based in that it's been proven to enhance children's well-being'* (ID201, teacher). The centring of children in decision-making practices aligns with prior research showing that educators value research, evidence and

professional learning (Eadie et al., 2023), largely because it helps to ensure optimal outcomes for the children in their care (Irvine et al., 2016).

For embedding practices, trialling and reflecting on the impact within their context was necessary for permanent change. One EC educator described: *'Implementing it, trying it out with the children, and then coming back as an educated team and reflecting on that. If we found out that it has really got good outcomes, then we will make it more like a permanent change and we might adjust structures and routines around it to make it work.'* (ID804, educational leader) For another interviewee, it was described as a more informal process: *'Trial and error and doing it and seeing if it works for the group of children.'* (ID300, Director) Observations and assessments of children supported educators' knowledge of children's learning progress, confirming if the practice was effective for planning: *'(it) helps to inform me on my expectations of children as individuals within the continuum of their learning.'* (ID400, Director).

### **Alignment with Teaching Philosophy and Service Context**

Several EC educators described evidence-based practices being more likely implemented and sustained if aligning with the service philosophies, children's needs, and their own beliefs. One EC educator said: *'I'd... think about does that fit with what I've been noticing for the children that I work with, how do I feel about that. Does it contradict my strong beliefs?'* (ID804, educational leader) Adapting practices based on children's changing needs was identified as part of the process: *'...not just replicating stuff we read but trying to make sense of what it means for us and how might that or might not it fit with our philosophy and our practices...'* (ID803, Director) and; *'If it's something that's relevant to the centre... that the practice is going to improve what we do and there's best outcomes for children, then we would discuss that.'* (ID501, educational leader) On the other hand, less effective practices would be tested and refined: *'if plan A isn't working, we'll go right through to plan Z until we find something that works, that's feasible and manageable and it's constantly fine tuning.'* (ID 800, educational leader).

As expressed by the participating educators, the influences on their use of evidence in practice are thus driven by their own unique microsystems and exosystems, as the influence of one system may surpass the other; for example, the effect that their own teaching philosophy, cultural context and beliefs about children's development exerts may supersede the influence of professional advice or their conversations with families (see Fig. 1). Therefore, adapting and contextualising original research findings within the ECEC environment can help ensure translation of research is better aligned with the unique needs, priorities and cultural context of a particular setting (Gleeson et al., 2022). Drawing on implementation science frameworks to inform the development of contextually adaptable implementation guides may also prove beneficial. Adopting an implementation science lens can provide a structured approach for examining the mechanisms and influences that enable successful adoption of evidence-based practices in educational contexts (Kallitsoglou, 2020). Implementation science emphasises the critical role of individual factors,

such as educator qualifications and preservice training, as well as professionals' attitudes and beliefs towards evidence-based practices in determining uptake and successful implementation (Boyd et al., 2016; Kallitsoglou, 2020). Furthermore, implementation science highlights the importance of considering organisational drivers, alongside individual factors, as part of a broader system of influences that operate at multiple levels of a system (from the social-political climate to the provider level), to collectively shape the use of evidence and implementation processes in ECEC settings (Boyd et al., 2016; Winton, 2016).

### **Using Evidence to Make Improvements or Address Gaps in Knowledge or Practice**

Educators used evidence to support their pedagogy, including to enhance practices, address gaps in their knowledge or programmes and support their confidence in professional conversations.

#### **Using Evidence to Make Improvements to Practice**

EC educators who adopted evidence-based practices were motivated by reflecting on and seeking ways of optimising their practice: *'to constantly strive for better quality, is to continuously be dipping out of either your own practitioner research or more formal research to inspire and challenge ideas and beliefs.'* (ID804, educational leader) Engaging with evidence was also seen as part of leadership positions: *'It's also probably a job requirement.'* (ID501, educational leader).

Educators looked to research when needing to change or improve practices: *'... you do it because you need to—something's not working, or something needs to be improved, or someone's not responding to a particular strategy.'* (ID400, Director). They also accessed evidence to understand advances in child development and *"evidence for different methods of teaching practice that can support children.'* (ID501, educational leader).

#### **Using Evidence to Address Gaps in Knowledge or Practice**

Educators also described how they accessed evidence to address an identified gap in their programme, either individually: *'a lot of my professional reading usually comes into areas of interest and things that I notice a lacking from the program, or where my personal skills are lacking,'* (ID801, educational leader) or at the centre level: *'The other reason we might use it [evidence] is if we identify a gap in our program... we wrote into our quality improvement plan, we identified a gap.'* (ID803, Director).

Educators also described accessing research evidence to justify the implementation of a new practice or approach: *‘I probably would look for more evidence. If it was something like woah, I don’t know about that...’* (ID200, teacher) Similarly, educators commented on the value of understanding the theory underpinning evidence-based practices to support both their professional knowledge and practice: *‘If they said, “Look, this worked for me.” I’d go, “Okay, let’s run with it. Let’s see how it works.” And then I’d probably go home and research it as well just so that I understood the nuts and bolts of it as a theory.’* (ID800, educational leader).

### **Using Evidence to Support Professional Conversations**

Educators reflected on using evidence to validate new approaches and to support professional conversations and discussions with families. For instance, EC educators reported gathering data to support discussions with families about children’s learning, being *‘more reflective as educators, more professional, and we have more professional conversations.’* (ID501, educational leader) Evidence was sometimes used to justify and explain the use of certain practices to families: *‘families would raise if they felt uncomfortable with it and have deeper conversations with the educators around what that was.’* (ID803, Director). From an ecological viewpoint, evidence-based strategies that can facilitate effective educator-family partnerships and information sharing are likely to derive multifaceted benefits for children’s development (Barnett et al., 2020; Levickis et al., 2022). Furthermore, practices that build educators’ confidence and self-efficacy are likely to yield benefits for the quality of teaching and consequently children’s outcomes (Conroy et al., 2019; Künsting et al., 2016).

## **Organisational Barriers and Enablers (leadership, culture and infrastructure)**

### **Supportive Leadership and Infrastructure**

Leadership and management support at the service, provider, sector and state/government levels were highlighted by interviewees as necessary to facilitate changes in practice. At the service level, a shared vision and role modelling was an enabling factor for the use of evidence-based practice: *‘The first thing is to listen to your colleagues, and to share with them what the perceived problem is and then to share a suggested response... if I’ve got their support, and they’ve got my support, then we’re working together as a team, and we’re more likely to have success.’* (ID400, Director) This finding resonates with prior research showing that threshold conditions including whole-service philosophies and supportive leadership (e.g. time, resources, and access to professional development) may help to overcome resistance to change and the establishment of shared practices (Page & Eadie, 2019). The affordances of leadership and the components within different organisational

cultures for enabling or constraining evidence use in ECEC settings is a potential area warranting further investigation.

At the provider level, increased access to resources and the provision of time helped educators: *'it does take a lot of time to source the research... to make sure it's actually applicable. To be able to have that sort of database... and have that access where it's not coming out of your wages and stuff all the time.'* (ID801, Director/teacher) Similarly, resources shared by leaders within the sector were helpful: *'they are very good at passing on things to us and supporting us through a change—a change in practice, any sort of a change that we need to make. They are probably our biggest support.'* (ID500, Director).

When in scarcity, organisational funding and resources were barriers to evidence use. At the structural level, affording services time and resources to embed practice change was key to addressing workforce challenges, exacerbated by COVID-19 pandemic: *'if you want to do it well you need to be able to take a long time through a change process to embed it for a long period of time and have sustained change in your service... there's workforce challenges around just getting relief staff to be able to get staff out of the room.'* (ID803, Director) Thus, while leadership championing of research evidence and fostering collaborative cultures to enable knowledge sharing were described as key enablers, a lack of time, staffing resources and access to professional learning were noted as barriers to evidence use in practice (Kishida et al., 2021).

### Access to Professional Learning and Networking

Professional learning opportunities were a critical enabler for sustained implementation of evidence-based practices, including access to high-quality professional development, professional learning communities, networking, and ongoing coaching or mentoring. Access to high-quality professional learning was identified as an enabler to the use of evidence-based practice: *'good access into professional learning is an essential enabler for evidence use.'* (ID803, Director) A need for professional learning due to discrepancies in educator qualifications was identified: *'I'm not sure that everybody, unless they're a minimum of diploma—so a cert three training wouldn't know—or person who's doing their cert three wouldn't have done research-based evidence.'* (ID501, educational leader) Educators also noted the importance of implementation supports such as monitoring the fidelity of implementation. Educators commented on the helpfulness of in-service and ongoing coaching after training to support the embedding of strategies in practice: *'I'm sure each and every one of us feel that we're implementing what we learnt from that training. But what the Autism Queensland thing will be able to give us feedback on is if we actually are or not.'* (ID400, Director). Given the diverse backgrounds and experiences of early childhood educators (Jackson, 2023), the findings underscore the significance of providing evidence-based professional learning for leaders, equipping them to guide learning and quality improvement by nurturing a 'whole-of-service' culture and supportive organisational practices including in-service coaching and mentoring (Elek et al., 2019). Furthermore, understanding more

about the theoretical basis (or theory of change) behind the diverse approaches to professional development to support evidence use would be recommended (Elek et al., 2024).

Professional networks were also reported as an important way to find out about latest research evidence within the early childhood context. Collaboration with parents, external organisations such as early childhood intervention services, as well as networking with colleagues in other services were referred to as sources of support and resources for evidence-based practice: *'because as much as meetings are good, it's really nice to get your hands in it and really meet people and have conversations and see how things work.'* (ID201, teacher) Therefore, a successful approach to bridge the research to practice gap may involve developing professional networks with more active links between researchers and educators, supporting greater involvement of educators in the research (Hemsley-Brown & Sharp, 2003).

### **Shared Vision with Colleagues and Families**

A 'whole-of-service' culture and a shared vision with colleagues was noted as important for supporting the use of evidence-based practices. In particular, the need to overcome resistance to change or differences in educator perspectives: *'Whether it's their own education level, their own pedagogies and values... some educators can reject change or find change really tricky'*. (ID804, educational leader) Another EC educator stated: *'there was a lot of resistance from some of the older, more established staff... When I came in with all these new ideas, there was a fair bit of resistance.'* (ID800, educational leader) The need to communicate the underpinning evidence of certain practices and decisions to families and stakeholders was also highlighted: *'Some of the risky play ideas might be that you need to get families on board and help them to understand the evidence behind why you would be doing something. Same with—we're run by council, so sometimes it would be letting them know that this evidence is here and shows that if we're doing this, we're providing more opportunities for children to learn and grow...'* (ID501, educational leader).

## Limitations and Future Research

We acknowledge several limitations of the current study that should be considered when interpreting results. First, the sample size and heterogeneous nature of our participants, while providing rich and diverse perspectives, limit the generalisability of findings to the broader ECEC population. The diverse roles and contexts of participants also limits the ability to make claims about the experiences of those in specific roles, although this was not the intent of the current study, it could provide important insights in future research. Conducting larger-scale survey-based studies with more representative samples of EC educators could complement and extend on the qualitative findings of the current study to quantify the presence of particular practices, attitudes and barriers related to evidence use that could inform prioritisation of interventions or supports to address common challenges in the ECEC sector. This would also enable meaningful comparisons across subgroups and help to identify specific areas where professional development is required.

Second, most participants who agreed to take part had higher qualification levels than the general EC workforce, which may have resulted in a sample that is not representative of the diverse qualification levels present in the ECEC sector. It is also possible that those who participated may have been more likely to have an interest in using research evidence to inform their practice, potentially skewing results to more positive attitudes or experiences with evidence-based practice. Exploring the perspectives of EC educators with varying levels of qualifications, particularly those with lower qualification levels, could be beneficial to identify gaps in preservice and in-service supports for adopting and implementing evidence in practice.

Finally, we recognise that one-off interview data may not capture all aspects of evidence use in ECEC settings. It would be beneficial for future studies to incorporate observational data and artefacts, as well as document analysis, and to collect longitudinal data, to provide a more comprehensive picture of how evidence is used in practice. Including observation and artefacts could provide further detail regarding how educators use search engines for example, how they verify that information is from a credible source and the specific type of observations and assessments they use to generate their own evidence.

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## Conclusion

Findings from this study suggest EC educators value both research and practice-based evidence to inform their practices, indicating a potential shift in how educators perceive and value the use of research evidence. However, some inconsistencies in approaches to the use of evidence-based practices highlight the need for more consistent whole-of-service approaches and support at every level for educators to effectively use reliable evidence in their daily practices. A multifaceted approach including convenient access to reliable sources, organisational and leadership supports, in-service training and coaching, and the translation of evidence into practical strategies may support educators to embed evidence use into their daily practices.

## Appendix A: Interview Schedule

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### Meaning of evidence-based practice

- Q1 When you hear that something is an ‘evidence-based practice’, what do you think it means? What makes a practice ‘evidence-based’ vs not?
- Q2 Think back over the past couple of days. Describe a time when you used ‘evidence’ to inform your teaching practice. What did you do? If someone was observing you, what would this practice have looked like or sounded like?

### Finding and assessing practitioner-generated evidence and research evidence

The Australian Education Research Organisation defines evidence broadly as anything used to support claims about the effectiveness of a particular educational practice, programme or policy. Evidence can come from assessments and observations, such as the evidence you might collect yourself in your room. We’re calling this ‘practitioner-generated evidence’. Or, evidence might be research/academic based, such as recommendations from books or findings from research. We’re calling this ‘research evidence’

- Q3 This question is about ‘practitioner-generated evidence’  
How do you generate your own evidence? What does that look like for you?  
How do you know whether the evidence you have collected is high-quality evidence that you can trust?
-

Q4	<p>This question is about 'research evidence'—evidence from academic research, books, articles, etc.</p> <p>Do you ever look for research evidence about approaches or practices that you already use or you could use in your work?</p> <p>If yes:</p> <ol style="list-style-type: none"><li>Why do you look for it? i.e. what motivates you to look for research evidence?</li><li>Where do you go to find research evidence?</li><li>How do you know if research evidence is reliable? What research evidence do you trust?</li><li>How do you know if research evidence is relevant to your work?</li></ol> <p>If no:</p> <ol style="list-style-type: none"><li>Why not?</li><li>Are you provided with research evidence by others?</li></ol> <p>If yes:</p> <ol style="list-style-type: none"><li>How do you know if research evidence is reliable? What research evidence do you trust?</li><li>How do you know if research evidence is relevant to your work?</li></ol>
Processes of using evidence Q5	<p>The next questions are asking about specific times when you may have used evidence [This may be a follow-up to #3 or #4; or can skip if already answered]</p> <p>Think about a teaching practice that you use that you know has a positive effect on child/student learning. What is it?</p> <ol style="list-style-type: none"><li>What evidence do you have that this practice is effective? How confident are you in this evidence?</li><li>[If they don't have a specific response to 4a] Say you wanted to collect evidence that this practice is effective. What would you do? How would you collect evidence that would make you confident that it is effective?</li><li>Have you always known that this practice is effective or have you changed your mind over time based on evidence?</li><li>What evidence would change your mind and lead you to stop using this practice?</li><li>Say you read something from a trusted research organisation that there is little evidence to support the use of that practice. What would you do?</li></ol>
Q6	<p>Thinking about the last time you tried a new practice or tried to refine or improve an existing practice – could you talk me through it How did you hear of it, what made you try it, how did you go about it?</p> <ul style="list-style-type: none"><li>Prompts: Did you work on it yourself or with colleagues? Did you need to plan for the change or create any new/adjusted materials? Did you ask for feedback on how it was working?</li></ul> <p>Do you still use it? Why (not)? If you don't use it, what would have to be different for you to still be using it now?</p>

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Q7	<p>Say you have heard that a particular practice works from a colleague, but you aren't using that practice. What would you do?</p> <p>a. Would you try to get more evidence about it? [Probe: Would you ask them 'how do you know it works'? How would this affect whether or not you try it?]</p> <p>b. Would you try to implement it?</p> <p>c. How would you go about implementing it?</p> <p>d. What would need to happen for you to continue to use that practice? What factors are important in continuing with a practice?</p>
Q8	<p>What do you trust more, evidence you have collected yourself, or evidence from academic research? Why?</p> <p>a. e.g. Say academic research claims a particular practice is ineffective for most students but you have collected evidence from your students that suggests it is effective (or vice versa). What would you do?</p> <p>b. [If they say that they trust evidence they collect themselves more] What has to be true about research evidence in order for you to trust it more?</p>
Implementation barriers and enablers	
Q9	<p>We know that time is a real issue for educators. Other than a lack of time, what are some other barriers you face in implementing evidence-based practice?</p> <p>For example, this could include personal barriers, service level or system barriers, etc.</p> <p>In schools: Colleagues / school leaders / school priorities or processes / department policies</p> <p>What do you think can be done to help remove these barriers? What kind of support would help you better use evidence?</p>
Q10	<p>Optional question (if time permits):</p> <p>Other than anything you have already mentioned, what support do you receive from your service/school/sector to help you use evidence in your work?</p>
Most influential evidence for changing practice	
Q11	<p>Optional question (if time permits): What kind of evidence do you need to change your practice? How do you engage with or use it?</p>

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## Declarations

**Conflict of interest** The authors report that they have no conflicts of interest.

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