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Harnessing Innovation

Implementing Living Evidence at the Institute of Education Sciences

DAVID ANDERSON EBP CONSULTING

LEYA MOHSIN FEDERATION OF AMERICAN SCIENTISTS

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About FAS

The **Federation of American Scientists (FAS)** is an independent, nonpartisan think tank that brings together members of the science and policy communities to collaborate on mitigating global catastrophic threats. Founded in November 1945 as the Federation of Atomic Scientists by scientists who built the first atomic bombs during the Manhattan Project, FAS is devoted to the belief that scientists, engineers, and other technically trained people have the ethical obligation to ensure that the technological fruits of their intellect and labor are applied to the benefit of humankind. In 1946, FAS rebranded as the Federation of American Scientists to broaden its focus to prevent global catastrophes.

Since its founding, FAS has served as an influential source of information and rigorous, evidence-based analysis of issues related to national security. Specifically, FAS works to reduce the spread and number of nuclear weapons, prevent nuclear and radiological terrorism, promote high standards for the safety and security of nuclear energy, illuminate government secrecy practices, and prevent the use of biological and chemical weapons.

FAS can be reached at fas@fas.org.

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Report Partners

The **Future Evidence Foundation (FEF)** seeks to change the way the world creates and uses trustworthy knowledge. From health to climate to all of science, FEF is creating innovative ways for making sense of science. FEF is working with scientists and technologists the world over to find points of leverage that can tip the system toward more trustworthy, actionable knowledge. FEF supports living evidence partnerships as a key mechanism for increasing the impact of knowledge on the world's biggest problems.

The **Federation of American Scientists (FAS)** envisions a world where science, technology, ideas and talent are deployed to solve the biggest challenges of our time. FAS embeds science, technology, innovation, and experience into governments and public discourse in order to build a healthy, safe, prosperous and equitable society. Through our work in evidence-based decision-making, FAS seeks to develop and execute on a vision that accelerates the use of robust science and evidence to inform decision making in a timely and credible manner.

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Process

Between June 2024 and January 2025, the Federation of American Scientists (FAS) and the Future Evidence Foundation (FEF) conducted a series of four workshops in collaboration with a team at the U.S. Department of Education's Institute of Education Sciences (IES) <u>who had expressed an interest</u> in how living evidence might increase efficiency and strengthen the usefulness of the What Works Clearinghouse (WWC). These workshops were part of a design sprint focused on producing and refining mechanisms for implementing a living evidence model within IES. The workshops had two primary aims:

- 1. To allow IES staff to learn from FEF experts about living evidence, and how it works in practice
- 2. To allow FAS and FEF staff to learn about existing WWC processes, and collaboratively brainstorm around which specific processes might need to change to support implementation of a living evidence framework.

Further, FAS and FEF led a consultation webinar in February 2025, open to the public, which convened 40+ education research experts. Many attendees were former and current IES contractors who had supported study reviews and the development of written products for the WWC. The webinar allowed the developers of this report to seek feedback on key considerations for living evidence adoption at the WWC.

This report presents the results of these engagements. It aims to provide actionable recommendations and options for IES to consider should it move forward in adopting a living evidence approach through the systematic reviews published through the WWC. The contents of this report were primarily developed prior to the Trump administration's February 7, 2025 decision to terminate all WWC contracts, and its March 11, 2025 decision to lay off nearly all staff at IES. These decisions will most likely lead to a future iteration of IES that looks different than what is discussed here. That said, we hope that the recommendations contained here are still relevant as IES carries out its Congressionally-mandated aim to 'widely disseminate information on scientifically valid research, statistics, and evaluation on education' (Education Sciences Reform Act, 2002). Further, the authors of this report hope that this is helpful to the broader education research community in capturing common challenges and possible solutions through the lens of living evidence.



Executive Summary

Living evidence is an emerging approach that aims to produce rigorous evidence syntheses that are up-to-date and responsive to decision-makers' needs. While this approach has gained significant traction globally and especially in its applications to healthcare, it has not been tested at large scale in the U.S. education context. From early 2024 to early 2025, a team from the Future Evidence Foundation and the Federation of American Scientists collaboratively executed a design sprint to support the Institute of Education Sciences in exploring what it might look like for this approach to be implemented through the What Works Clearinghouse. This report, informed by conversations between these groups, identifies key considerations for how the Institute's processes potentially need to shift to support the adoption of living evidence. It discusses how IES can identify topics for which there is demand for living reviews, opportunities to adapt processes for literature search and screening, and potential changes to publication of evidence syntheses. Further, it identifies opportunities to bring greater efficiency to existing processes such as the establishment of standing panels, and a set of options for approaches that would ensure that the living reviews that may be developed are most responsive to the needs of the stakeholders.



1 Introduction

Understanding what works best, and for whom, is crucial to ensure all students have access to a high-quality education. Policy makers, school leaders and teachers seek evidence about effective teaching and learning to efficiently build students' skills, knowledge and capabilities.

Globally, institutions of research, advice and policy are adapting their approaches to ensure what they produce is increasingly relevant - all while maintaining rigor. This is a response both to the saturation of new studies and information available, and the acknowledgement that practitioners need timely insights into what works best to be most impactful.

An emergent approach, **living evidence**, has shown promising results – providing guidance to practitioners in weeks and months, rather than years after the original studies were published. In themselves, the activities that make up a living approach are not vastly different from a traditional approach to evidence synthesis, but the cadence at which those activities are undertaken shifts to make actionable evidence available in a more timely manner.

This options paper explores opportunities for the Institute of Educational Sciences through the What Works Clearinghouse (WWC) to adopt elements of a living evidence approach. It shares where and how this approach might lead to greater efficiency and impact.

The Institute of Education Sciences and the What Works Clearinghouse

The Institute of Education Sciences exists to help people make informed educational decisions through the provision of 'high-quality research, data, statistics and evaluations'. (The Institute of Education Sciences, 2025)

[IES] gives educators, parents, and policymakers the resources and tools to make educated decisions about our educational system. It is an important part of IES's strategy to use rigorous and relevant research, evaluation, and statistics to improve the nation's education system.

- Institute for Education Sciences, n.d.

Within the National Center for Education Evaluation and Regional Assistance (NCEE), the WWC focuses on answering questions around what 'works' in education through evidence synthesis and sharing the resulting findings. The mission of the WWC is 'be a central and trusted source of scientific evidence for what works in education.'

The WWC 'synthesizes the best evidence on the effectiveness of education programs, policies, and practices' (Institute for Education Sciences, n.d.). Additionally, the WWC provides technical assistance to researchers carrying out evaluations, sponsors of evaluations, and educators implementing evidence-based interventions.

Synthesis activities are conducted by WWC-certified reviewers, typically experienced education researchers that are awarded contracts to complete this work on behalf of IES. The WWC then disseminates results of these evidence syntheses through a range of products, including practice guides¹ and intervention reports².

¹ A **practice guide** is a publication that presents recommendations for educators to address challenges in their classrooms and schools. They are based on reviews of research, the experiences of practitioners, and the expert opinions of a panel of nationally recognized experts.

² An intervention report is a summary of findings of the highest-quality research on a given program, practice or policy in education.



Key Features



Rhythms of operating

One area where a living evidence approach differs significantly from a traditional approach is the rhythms of activities and engagement. A living approach is likely to require activities to occur continually, with additional resources applied at key points, but with less intensity than the traditional approach may demand.

This is explored further in section 4.



Prioritizing areas to transition to a living approach

Not all topic areas will be ideal candidates for living evidence. For example, areas where there is high confidence in the evidence and few studies being conducted would be less valuable when compared with an emerging, high-priority topic. A range of activities may be conducted to inform the selection and prioritization of topic areas.

This is explored further in section 4.2.



Standing Panels

Standing panels are convened around a topic or interest area and established to be run as ongoing or long-term groups, rather than time-limited and tied to the preparation of a particular review or report. Multiple panels may exist around a single topic to leverage the insights and experiences of a wide-rage of stakeholders.

This is explored further in section 4.3.



2 | Introduction to Living Evidence

What is Living Evidence?

A living evidence approach guides the formation of up-to-date evidence reviews on topics of interest. This ensures that the most current understanding of what works (and how it works) is accessible to policymakers, practitioners, and other key education stakeholders, in order for informed decisions to be made (Australian Living Evidence Collaboration, 2025; Australian Living Evidence Consortium, 2022).

The adoption of a living evidence approach provides an opportunity to be responsive to topics that are identified by stakeholders as time-sensitive or high-value, to adjust quickly where an area of research is emerging or changing, and to ensure guidelines and recommendations reflect the most relevant and current evidence. A shift to a living evidence approach should build on already established good practices, including the central tenet of rigor in IES' commissioning of research, and in the standards that guide WWC evidence reviews.

The development of a living approach seeks to maintain the methodological rigour of traditional guidelines development while ensuring the currency, validity, and relevance of guideline recommendations.

– Cheyne, et al.

In other fields utilizing living evidence approaches, 'living' applies to the processes of identifying the topic area of review, the review itself, the formation of guidelines and the publication and dissemination of the information. A <u>series of papers</u> released in 2017 provides an overview of the emerging living systematic review concept, noting key challenges as well as the strategies and potential of a living approach. A <u>subsequent series</u> published in 2023 provides an introduction to living evidence and details the experience of the Australian Living Evidence Collaboration (ALEC) in developing living guidelines in health. Further detail of living systematic reviews and living evidence can be found in the Further Reading section (Appendix B), with each of the aforementioned papers listed.

The Features of a Living Evidence Approach

Broadly, living evidence is an approach to continually update systematic reviews as new relevant evidence becomes available (Simmonds et al., 2022) and provides 'one or more living recommendations that are continually updated as new information [emerges]' (Australian Living Evidence Consortium, 2022). A living evidence approach diverges from a traditional approach to conducting evidence reviews in the rhythm and ways of operating, rather than the core elements within the process itself.

Several key features of a living evidence approach are explored in this paper given their relevance to the work of the WWC.

3 | The opportunity for the Institute of Education Sciences and the What Works Clearinghouse

Challenges facing the WWC and opportunities presented by a living evidence approach

Design sprint workshops throughout 2024 and 2025 highlighted several challenges that proved catalytic in WWC deciding to explore how it might employ a living evidence approach. This section details the three challenges that were most commonly identified and thus prioritized, and the opportunity that exists to address these through a living evidence approach.

The opportunities outlined do not intend to solve the challenges alone - living evidence is not a silver bullet, but does have the capacity to improve efficiencies while maintaining the WWC's rigorous evidence standards.

CHALLENGE 1. PRACTITIONERS AND POLICY-MAKERS DO NOT HAVE ACCESS TO THE MOST UP-TO-DATE RESEARCH IN ORDER TO MAKE DECISIONS ABOUT THEIR PRACTICE

It is difficult to provide practitioners and policy makers with relevant and up-to-date research across a wide range of priority topic areas.

Even recently released reports and practice guides risk being out-of-date as the rate at which new research is emerging since having a fixed searching cutoff date may mean a quality paper is excluded despite being relevant and timely.

OPPORTUNITY

Living evidence requires a new rhythm of evidence review and generation of products. As research is sourced and screened, the relevant evidence is incorporated into publications and resources. This process likely has the added benefit of increasing the transparency of expectations around inclusion of new evidence.

Several actions may leverage this opportunity:

- Commissioning standing panels on topics and questions deemed high priority who would see new evidence reviewed soon after publication, with protocols in place to trigger further action if the evidence met certain predetermined criteria³. New evidence could be identified by WWC publicly as being under consideration before being formally reviewed or incorporated,
- signalling that the panel has engaged with the emerging evidence.
- A clear and transparent process is established to guide the inclusion of new evidence, building trust with key education stakeholders. While this is not specific to a living approach, a shift to a new way of working may provide a natural point to clarify and communicate processes.

3 For more on how criteria may be activated within this process, please see Section 4.4.



CHALLENGE 2. THE EVIDENCE REVIEWS CURRENTLY BEING CONDUCTED ARE TIME-INTENSIVE FOR BOTH IES STAFF AND WWC CONTRACTORS.

Education research covers a wide variety of topics and even with a slowdown in research since the pandemic, the number of studies that potentially fall in WWC's purview is very large and outstrips capacity of WWC staff to identify, review, and publish reports as responsively as they would like.

Routinely searching the literature is time and labor intensive for IES staff and WWC contractors. A complicating factor to this is that much of new research emerging from the education field comes from the grey literature (e.g., study reports published online by research firms or think tanks) which can be difficult to search for and screen given the absence of a central collection or storage point, and the inconsistency of abstracts which may limit searching and screening in an automated way.

Added to these challenges is the current lack of clarity in copyright law regarding when and how it is allowable to use machine learning or artificial intelligence tools to search and extract data from websites publishing the grey literature⁴.

In recent years, the Department of Education has taken a conservative approach to interpreting existing copyright law while awaiting rulings from the courts and the U.S. Copyright Office. As a result, WWC staff or contractors must search each gray literature website "by hand," reviewing individual reports to assess their eligibility for review.

Additionally, reviewing, preparing, and getting clearance to post documents for publication online is time and labor intensive

OPPORTUNITY

Living evidence approaches can streamline activities, reducing the high-demand points that exist in the current process, and provide efficiencies in the convening of long-term panels.⁵

- By appointing standing panels who are regularly engaged in literature surveillance and engagement with stakeholders, WWC could more efficiently stay abreast of the research literature in targeted areas than under the current practice of ramping up time-limited panels for the production of individual research syntheses. This may have the added benefit of reducing unnecessary, duplicative research.
 Streamline search and screening procedures using technological and other solutions to free up staff and contractors to complete
- evidence reviews more efficiently. For example, automation of searches on grey literature, or the use of trained AI to screen pre-identified studies⁶. Used thoughtfully, these approaches are likely to be beneficial to both living evidence approaches, and traditional approaches.

CHALLENGE 3. INCOMPLETE PICTURE OF WHERE THERE ARE GAPS IN THE RESEARCH LITERATURE ON TOPICS THAT MAY BE OF INTEREST TO THE EDUCATION FIELD.

As <u>described</u> by Acting IES Director Matthew Soldner, the current approach to monitoring and reviewing evidence paints an incomplete picture both of current available evidence (as discussed under Challenge #1) but also important evidence gaps that could usefully be filled with new research. Given resource constraints, the WWC is only focused on complete searches of the literature in seven relatively narrow topic areas at any given point in time.

Researchers are able to submit studies they've conducted to the WWC for review, but this is also a piecemeal approach that does not capture the full breadth of rigorous research that may meet WWC standards for review, nor give a full sense of important areas where more research is needed.

The resulting incomplete picture of where important research gaps exist means research funders, including the National Center for Education Research at IES, may not be able to utilize the WWC to understand where new research is most needed.

OPPORTUNITY

Exploring gap maps:

- Broad searches conducted in an ongoing manner, potentially through an 'Evidence Hub' approach (read more in Section 4.2).
- Leverage standing panels to determine where there is emerging evidence, or a need for rigorous evaluation of new practices.
 Continuously updated living reviews can feed into research proposal review by giving reviewers an up-to-date sense of what related research has been done and where there are gaps, improving the efficiency of the review process for both IES staff and their review panels, and education research funders more broadly.

- 5 A visual of the work 'intensity' can be found in Appendix B
- 6 Considerations for emerging AI is explored in section 4.5.

⁴ As of the time of this report's release, the U.S. Copyright Office has not yet provided guidance on whether it is permissible for such tools to access and search the full text of academic articles and research reports. Without access to the full text, data on important features and findings of studies will be incomplete and thus limit the efficiencies that can be gained through use of these tools.

4 | A framework and options for transitioning to a living approach

The success of a living approach relies on flexibility and efficiency, while relying on the established foundations of rigorous methodologies and practices of a traditional approach. These foundations are already in place as critical parts of WWC's current approach to reviewing evidence and publishing practitioner-facing resources. However, nuance in how they may operate in living mode is detailed in the key stages below.

4.1 An overview of transitioning from traditional to a living approach

Table 1. Summary of current practice and consideration of a living evidence approach⁷

ELEMENT/ACTIVITY	CURRENT WWC APPROACH TO MONITORING, REVIEWING, AND REPORTING ON RESEARCH LITERATURE	CONSIDERATIONS FOR LIVING APPROACH IMPLEMENTATION FOR WWC
PEOPLE - GOVERNANCE STRUCTURES AND TEAM	WWC staff support the execution of a contract for a fixed-term project, attached to the development of a product such as an intervention report or practice guide. Structures support working on discrete projects.	A living approach requires staff to work in an iterative way, and should allow for turnover of key stakeholders, such as members of panels that develop recommendations based on the evidence. Utilizing existing and new structures to enable communication and sharing of knowledge and insights across WWC and other IES teams would be advantageous. This is further detailed in section 4.2
PEOPLE - ENGAGEMENT OF SUBJECT MATTER EXPERTS, DECISION- MAKERS, LEADERSHIP, PRACTITIONERS, FAMILIES, STUDENTS AND EVIDENCE TEAM	Panels, and other forms of stakeholder engagement, are in place for the fixed term of the project, or may be ad hoc, and don't always include the breadth of stakeholders (e.g. students). The <u>SWEEP</u> panel exists to provide input into WWC activities. Existing <u>Technical Working Groups</u> exist to discuss research and identify gaps.	Standing panels to oversee the review and development of reports, as well as standing panels to provide insights from a school / family / student lens may be considered. Stakeholder engagement processes are ongoing and are designed to account for stakeholder turnover, utilisation of existing stakeholder insight and engagement practices, and can be evaluated and improved over time.
SCOPE AND PRIORITIZATION OF QUESTIONS	Scope is established at the beginning and does not change during the life of the project. Questions are prioritized for completion in the fixed period of the project, e.g. the period of development associated with a practice guide.	The scope is outlined when a decision is made to transition to a living approach and may be revised as new information comes to hand, led by a standing panel. Questions can be prioritized for varying intensities of living mode and priorities may be revised throughout the process, with opportunities to add new questions responsive to emerging challenges or areas of interest.
EVIDENCE SURVEILLANCE AND SEARCHING	Once, or at very infrequent intervals, at a prespecified time point during development and typically not repeated before publication.	Continual and may be conducted at different frequencies (e.g., weekly or monthly), depending on the specific application of living evidence. Best practice in health fields suggests that searches should be done at least once every 3 months to be considered living. In education, this may be too frequent. Given the less prolific evidence generation and the limitations of databases leveraged for literature surveillance (particularly the Education Resources Information Center, better known as ERIC) every 6 months is likely a more appropriate cadence at the WWC. Further details are provided in section 4.4.

7 Table 1 is adapted from notes on the living systematic review (LSR) process presented through the design sprint workshops (developed by Britta Tendal Jeppensen [FEF, 2024]); (Cheyne et al., 2023), and (Australian Living Evidence Consortium, 2022). This summary reflects the operations of the What Works Clearinghouse in January 2025 when the fourth design sprint meeting was held.



IMPLEMENTING LIVING EVIDENCE AT THE INSTITUTE OF EDUCATION SCIENCES

ELEMENT/ACTIVITY	CURRENT WWC APPROACH TO Monitoring, reviewing, and Reporting on research literature	CONSIDERATIONS FOR LIVING APPROACH IMPLEMENTATION FOR WWC
SCREENING	Once, managed by WWC-certified reviewers, often manual and time- consuming. Studies screened for eligibility and reviewed against <u>WWC standards</u> (figure 3).	Managed by WWC-certified reviewers, supported by machine learning and living processes for efficiency, screened and reviewed against existing WWC standards.
EXTRACTION AND RISK OF BIAS (ROB)	Once, extraction is conducted and Risk of Bias (RoB) judged according to existing WWC standards.	Ongoing and according to existing WWC standards, supported by machine learning and living processes for efficiency.
ANALYSIS	Once, after extraction.	Ongoing, potential to be supported by machine learning and living processes for efficiency.
INCORPORATING NEW EVIDENCE AFTER INITIAL REVIEW	Typically, no new evidence is incorporated after the initial review period is concluded.	Continual, according to decision thresholds and triggers ⁸ for when to incorporate new evidence.
CERTAINTY ASSESSMENT (EFFECT ESTIMATES, SUMMARIES OF EVIDENCE, EVIDENCE PROFILES AND CERTAINTY OF EVIDENCE)	Once, at the time of evidence review and resource development. Effectiveness ratings and evidence tier designation occurs once before publication of each product (What Works Clearinghouse, 2022, pg 8).	Effectiveness ratings and evidence tier designations continually updated and revised as new evidence is incorporated. The frequency may change responsive to predetermined trigger points.
EVIDENCE TO DECISION	Once, meetings are fixed for the period of the project.	Guideline panel meetings are ongoing, with inbuilt structures for member turn over, and flexible scheduling responsive to workflow.
RECOMMENDATION	Once, made by review panels during development of the product.	Continually. Standing review panels propose when a product requires updating and are then able to update recommendations.
PEER REVIEW	Products are endorsed and approved at the end of the product development.	Approvals / endorsement: At multiple timepoints, coordinated with external approval timelines and processes (e.g., from commissioning bodies). Approval for individual recommendations are usually sought, rather than for the entire guideline (in the case of WWC, intervention reports or practice guides) ⁹ .
	Public consultation on draft: Not done under current IES process; rather, draft text is reviewed by IES staff.	Standing panels of practitioners at multiple timepoints usually related to individual recommendations.
PUBLICATION AND DISSEMINATION	Once, after completion of guideline development or updating.	Ongoing, at multiple timepoints, as new findings emerge, recommendations are generated, or changes are made to individual recommendations.

4.2 Prioritizing areas for a living approach

Identifying priority topics and questions for a living evidence approach is not dissimilar from the approaches that are used within a traditional approach. There are several benefits, however, that a living approach creates when applied to an appropriate topic and question. Design sprint discussions highlighted the need to not only identify topic areas that may benefit from a living evidence approach, but also explored considerations for how they would be prioritized.

⁸ Triggers for the inclusion of new evidence are explored further in Section 4.5.

⁹ The possibility of updating the findings and evidence ratings of an intervention report, for example, was highlighted as an opportunity within the stakeholder webinar, however it may require adaptations of how the product is published.



Demand-sensing and identifying high-priority living evidence candidates

It may not not be feasible for an organization as large as WWC to transition all of the work under its purview from traditional to living, nor is it necessarily desirable. There will be some topics and questions that are not suitable to transition to a living approach, or that may not be a priority to transition immediately. Developing processes to understand where demand for evidence and guidance exists will provide important insights into what should be the priority to priority to transition to living.

Decisions around whether a question or topic should be considered for a living approach are typically guided by three central questions, with affirmative answers indicating a possible candidate.

- 1. Is the question / topic a high priority to policymakers, practitioners, and/or other stakeholders either (i) perpetually (e.g., early literacy, dropout prevention) or (ii) topically (e.g. postsecondary education, chronic absenteeism, tutoring)?
- 2. Is there uncertainty about the evidence (for example, where new evidence might provide greater specificity around implications for practice)?
- 3. Will there likely be substantial evidence emerging in the near term and/or on a regular basis?

Figure 1 below, outlines these key questions that are likely to guide a decision.

Figure 1. Selection of questions of focus for living mode Adapted from: Cheyne, et al. (2022).



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Organizations undertaking living evidence reviews and developing living guidelines have approached answering these questions through a suite of activities, some of which may be feasible for WWC staff. Examples from those organizations' experiences are outlined below.

Demand-sensing activities have focused on the contributions of stakeholders, for example:

- establishing panels who contribute to the development of questions, priority topics, scope and outcomes, and provide feedback on recommendations (such as the 'consumer panel' examples from Australian living guidelines on COVID-19 and stroke (Synnot et al. 2023))
- survey-style activities (including IES leadership / staff; teachers; families; aligned organizations);
- review of relevant internal documents (e.g., Regional Educational Laboratory reports which include practitioner interests); and
- policy or government interest (such as the recent AHRQ living review which focused on an area suggested by the U.S. Congress (Chou et al., 2022))
- social media or mainstream media scanning.

Demand-sensing activities have also been used to explore emergent research, for example:

- where numerous reports from IES commissioned studies will be released in the near future;
- tracking pre-registered studies on common registries or through standing panels; and
- where there is emerging research in a priority area and potential for significant impact or change to practice (e.g., there are disagreements in the field that new research might resolve).

A general theme from discussions within the design sprint sessions was that it is not possible to immediately use a living evidence approach across all areas of education research. For that reason, prioritizing topics to tackle as pilot projects allows the WWC to test a living evidence approach in an area that will benefit and provide value to practitioners and policy makers.

Considering the scale of living evidence for implementation

Through the design sprints, a core question around scale emerged when exploring the prioritisation of living evidence pilot topic:

How broadly should a topic area be defined?

One approach may be to focus on shifting a narrow topic or interest area from traditional to living. For WWC, this might be a specific **intervention report**, or a **family of interventions** that share key features and the same targeted outcomes.

A more comprehensive approach could be to reorganize the current research agenda and topic areas into **evidence hubs** or around existing **practice guide** topics which allow for the allocation of standing panels and scan broader areas of the research. These levels are detailed below from most to least broadly defined.

1 Evidence hubs

Evidence hubs look at broad topic areas (e.g., language and literacy, STEM) that could encompass multiple potential practice guide topics. WWC already has broad topic areas defined which would provide the framework for the 'evidence hub' model.¹⁰

¹⁰ In May 2024, IES released a <u>Request for Information</u> related to the possible issuance of a contract to run an Evidence Hub. This contract, titled "WHEAT-ELAL" would support "ongoing engagement with an advisory panel of researchers and educators, systematic WWC reviews of relevant research on high-priority topics, and the preparation of up to 3 practice guides and complementary products" related to English Language Arts and literacy instruction. Further, IES signaled intent to release additional evidence hub contracts through FY2028.



2 | Practice guide topics

Living evidence could be applied to monitor the literature on topics for which there are existing practice guides (e.g., that may not have been updated recently), leveraging already developed review protocols.

3 | Families of interventions strategy

Families of interventions would explore specific named interventions with similar features seeking to affect a particular outcome or set of outcomes (e.g., strategies for fostering and teaching prosocial behavior).

4 | Specific intervention reports

It may be appropriate to transition individual intervention reports (e.g. Good Behavior Game; I-BEST) to living if they are deemed appropriate candidates (i.e., likely to see emergence of new evidence and to be of interest to stakeholders).

PRIORITY CONSIDERATION: SCALE

The scale at which a living approach could be piloted within the WWC was explored with IES staff throughout the design sprint workshops in 2024 and 2025. Of the four potential levels outlined in this section, two were identified as having particular promise in the short- and medium-term for the WWC: evidence hubs and intervention reports.

Evidence hubs

IES staff noted that working at the hub level to scan and screen literature could inform decisions on where additional or future IES-funded research may be needed, or where there was a sufficiently robust area of emerging research to justify a new WWC publication such as a practice guide. Several advantages to working at this level were identified, including:

- defined topic areas already exist as part of the WWC which would provide necessary structures for evidence hubs;
- the potential to reduce duplication as the broad focus of evidence hubs could create a birds eye view of the literature within the research area;
- the creation of comprehensive gap-maps to highlight areas which may require further investment or research within that area.

The challenge that evidence hubs might face is a deluge of research in response to the broad nature of the topic. It may be challenging to develop search protocols for such broad topics that strike a balance between being sufficiently inclusive without also flagging many studies that are not relevant to reviews.

Intervention reports

The other area of potential which IES staff felt warranted further exploration was in shifting high-priority intervention reports into a living mode where new studies are likely to be conducted and lead to more up-to-date information for practitioners and policy makers. A focus at the intervention report level provides some clear advantages:

- existing search protocols would likely be applicable;
- searching around an 'intervention' on a regular basis would be straightforward; and
- the reports themselves would be relatively simple to refresh and update given the narrow scope.

Intervention reports, however, might be so narrow that the emergence of new evidence in the near term to trigger a review may be less likely. In many cases, there are very few (if any) evaluations of specific interventions,



and new evidence emerges slowly. As such, the reasons for applying a living evidence approach may be redundant.

4.3 Preparing to transition to a living approach

When the decision is made to transition to a living approach, there are a range of structural and logistical considerations. As outlined in Section 2, the processes do not diverge dramatically from the established norms and processes that are in place, however there are some adaptations that are necessary to experience the full potential of a living approach. We explore the two key considerations that were most often raised and discussed throughout the design sprint sessions below.

PRIORITY CONSIDERATION: STANDING PANELS

The establishment of standing panels, when curated appropriately, allows for ongoing engagement, the building of trust, and greater efficiency. For early adopters of living evidence, standing panels noted richer, more engaging and responsive conversation with decision-makers in which their questions/concerns drive the evidence work, and their interaction with the evidence led to new questions, and so on and so on in dynamic, ongoing cycles (Synnot et al., 2023).

The introduction of standing panels to review evidence in selected topic areas and run ongoing meta-analyses provides a number of benefits beyond what is offered in a traditional panel process.

The engagement of a group of panelists who are experienced and knowledgeable in the topic area, and who are regularly seeking and reviewing emerging evidence, provides a responsive model through more consistent, but less intense, efforts. The development of standing panels may also mitigate challenges around the duplication of work in searching and screening given panelists would be engaged for longer periods, may work across multiple publications or products, and would therefore have awareness of existing work conducted in the topic.

PRIORITY CONSIDERATION: CONTRACTING

In shifting to a living evidence model, greater flexibility in the commissioning and activity around research is likely to be efficient and advantageous. As is typical in many federal agencies, the WWC typically awards five-year contracts to support its evidence synthesis activities. It is more difficult to predict the workflow of a standing panel over a 5-year period than it is to predict the work of a panel process which is done with reference to a point in time and with a specific deliverable or output.

Developing standards or templates to guide the commissioning process of standing panels would be beneficial in supporting the transition. Core elements which may be necessary to consider include:

- Expectations around frequency of key activities (review / analysis / panel meetings), which may be estimated upfront based on the predicted rate that research is expected to be published
- 'Options lists' in which the contract stipulates a menu of activities which can be agreed upon in an expedited process, given the existing contract
- Predetermined 'trigger' points that establish when activity would take place (how many new studies; increase in evidence certainty; emergence of studies that conflict with the existing evidence base; time points)
- Clauses to cover instances of no new evidence; or the occasion that the area is 'retired' from living (this instance is explored further in Section 4.7);



• Indefinite delivery, indefinite quantity contracting (IDIQ), which is explained by the <u>Congressional Research</u> <u>Service here</u>.

4.4 Literature surveillance and searching

Approaches to literature surveillance align with the WWC's Procedures and Standards handbook and associated guidance, but may vary based on the scale at which the topic is being considered.

There are a range of influences and questions to consider.

- How scale (discussed in Section 4.2) would impact practice for example, the associated trade offs around developing search protocols that balance being comprehensive while not gathering an overwhelming body of studies to review.
- If the use of technology / artificial intelligence (AI) to conduct evidence surveillance and to identify studies which meet inclusion criteria is reliable¹¹ as well as efficient, as these tools are likely to improve their precision over time.
- That the frequency of searching may be pre-determined by the rate at which new research is expected, responsive to the scope of inquiry. Current examples from health suggests searching should be done every 3 months or more frequently to be considered living, however the WWC is limited by update frequency of sources (particularly ERIC) and is more feasibly tackled every six months¹².
- Current practices around grey literature may need adaptation to support living, acknowledging the challenges with locating and scanning that subset of literature.
- Reporting on the surveillance process to ensure transparency of the process may be valuable for stakeholders.
- Adding more automation to literature searches generally, for example using AI/machine learning tools to search and sort grey literature within the limitations of current copyright law.

4.5 Assessment and synthesis of evidence

Transitioning to a living approach requires an additional layer of decision making and involves the consideration of trade-offs unique to the new way of working. Rigorous methods already in place for the synthesis of evidence should be the core of this work, with additional considerations to support a living approach, particularly around outlining options for incorporating evidence.

Considerations for the incorporation of new evidence

A default inclusion, where each new study is incorporated as it emerges, responds quickly to the emergence of new evidence, but presents challenges for workload and sustainability. It is likely to be advantageous to establish a protocol which supports consistency across evidence activities, based on a set of requirements for inclusion. These may look like a set of predetermined trigger points to flag when the process of review and updating resources, guidelines or recommendations should begin - often in reference to the effect size or the certainty of the evidence.

For example, these may relate to one, or a combination of, the following triggers.

¹¹ Currently, the use of AI has limitations that raise questions about the reliability and validity of outputs, such as not yet being able to reliably identify all of the available evidence where topics are less-clearly defined, excluding relevant studies, and lacking transparency around the process (Cochrane, 2025).

¹² The Education Resources Information Center (ERIC) is the primary database which indexes research found in the grey literature. As identifying and indexing these key resources is a largely manual, human-driven process, the team behind ERIC is only able to comb sources of grey literature about once every six months.

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- Studies are reviewed and deemed to meet the criteria as 'strong evidence' as defined by the U.S. Department of Education's evidence definitions.
- An increase in sample size, for example the cumulative population increases by greater than 10% or the cumulative number of studies increases by 20%.
- An increase in precision to a recommendation or finding, for example a new study may give greater confidence on the dosage required for the effective implementation of an intervention.
- Improvements to certainty of evidence; for example, the identification of RCTs in areas previously only covered by quasi-experimental research or replication studies which demonstrate consistent outcomes.
- Changes to the directionality of evidence, for example if null or negative impact estimates are identified in new evidence, but previous evidence exclusively identified positive impacts.
- Significant differences in the evidence coming from new studies such as those that capture a sub-group of previously unstudied students which shows a shift in the spread of outcomes, which may lead to developing specific guidance for that sub-group.
- Environmental or contextual factors are identified, for example an immediate need due to a large-scale change such as a pandemic or regulatory change, or a reduction in the cost of a program.
- Previously referenced studies "age out" over time. Studies may become less relevant as context changes, or as the WWC updates its standards of rigor in accordance with research standards. For example, studies that are 15+ years old may hold lower relevance to practice recommendations and may be excluded or given less weight in evidence-to-decision frameworks.

Approaches to increase efficiency

The activities within the assessment and synthesis phase may be significantly assisted by technologies which are developed to reduce the hours spent by researchers on time-consuming and repetitive tasks. This is not unique to a living approach, however considering these approaches may be particularly helpful when these activities are being undertaken more-or-less continually.

Figure 2. Evidence Accelerated (Elliot, J. et al. 2021)

- Primary study
- Guideline publication (living)
- Guideline publication (conventional)
 - ving) Time to publication

Stroke

The Australian Stroke Foundation reduced the time between guideline updates from 7 years to under 3 months.





One example of transformation and efficiency through automation has been a collaboration in service of The Stroke Foundation of Australia. In transitioning to a living approach, the Foundation utilized specialist review software - <u>Covidence</u> - and research teams were able to establish monthly automated searches, allowing teams to focus on the incorporation of evidence - turning findings into publications in months, not years - as illustrated in Figure 2.

Artificial intelligence technologies are demonstrating greater sophistication in this space, but for the most part are not yet reliable enough to be trusted with these applications independent of the researchers involved.

PRIORITY CONSIDERATION: EMERGING TOOLS TO SUPPORT EVIDENCE SYNTHESIS

Given the frequency of evidence synthesis within a living evidence approach, reliable and well-used AI tools are likely to make a living approach more feasible.

While there remain questions about the current reliability of AI as it applies to supporting evidence synthesis, there is considerable movement in the fields of health and climate science. Notably, the Digital Evidence Synthesis Tool INnovation for Yielding Improvements in Climate & Health (DESTINY) initiative is a consortium working to build rigorous AI-driven evidence synthesis tools and 'reconfiguring human-machine interactions' (<u>DESTINY</u> consortium, 2024). A core principle of 'human-in-the-loop' remains central to tool development – aiming to have the tools widely used in safe and responsible ways to create efficient and reliable syntheses that will inform practice, with human experts checking AI's work and making final decisions around findings and recommendations.

Recently, a draft paper was published outlining a number of core considerations around AI in this space. The 'Responsible AI in Evidence Synthesis (RAISE)' guidance provides recommendations for groups of individuals with different roles within the synthesis ecosystem. (Thomas et al., 2025). Further iterations of this paper are expected later in 2025 and may be a useful reference for IES staff in exploring guardrails for synthesis and best-practice in this emerging domain.

As many AI synthesis tools emerge, it is essential that users of these tools understand their responsibilities as users, but also conduct due diligence and opt for tools which have been robustly evaluated and validated and provide transparency around their processes.

4.6 Publication and dissemination

Living evidence provides unique challenges in planning the publication and dissemination of evidence. This, in part, is due to the static nature of many existing publications - which, once peer-reviewed, are published on the WWC website. Another contributing factor to the challenge is that changes arising from new evidence may only feed into a small element of a much larger product, and updating these may mean revisiting an entire practice guide – a time consuming exercise.

Several organizations conducting living evidence reviews have identified these challenges, and addressed them in due course. In the U.S., one early adopter of a living approach was the Agency for Healthcare Research and Quality (AHRQ). One consideration highlighted in <u>a white paper</u> on lessons learned from AHRQ's implementation process (which you will find in the Further Reading Section) was the frequency at which new information is disseminated. The challenge was to meet the need for high-quality, reliable evidence while increasing efforts to engage meaningfully with stakeholders. As part of encouraging trust in AHRQ as a reliable source, visual dashboards were introduced to concisely summarize the evidence and flag recent inclusions, giving users confidence in the process and outputs.

There are considerations around other stages of the process too, including pre-publication approvals which may require efforts to align current WWC practice with the adaptable time frames of a living approach. Knowing when



updates are likely to occur should be easy to predict so that peer-review can be expedited by providing early notice to the Standards and Review Office who are responsible for appointing peer-reviewers. Further, as has been done at other federal agencies like AHRQ, IES might consider appointing the same peer reviewer(s) to all iterations of a living review to expedite the review process whenever possible.

A number of options for streamlining the publication and dissemination process within a living evidence approach exist. Existing protocols around publication and dissemination are likely to be transferable or adaptable to areas which transition to a living evidence approach. The WWC may consider additional activities, including:

- publishing new or updated reviews online and in formats that can be edited in sections and do not require the review and approvals of an entire document;
- publishing an online list of updated or new evidence reviews may be useful in flagging where evidence has led to a change in evidence ratings (for example, this update summary from <u>The Stroke Foundation</u>);
- · sharing brief updates where no new evidence has been identified for inclusion; and
- clear labeling to manage version control, consistent across all products (Australian Living Evidence Consortium, 2022)

4.7 Transitioning out of living mode (sunsetting)

A key consideration for any topic area which is transitioned to a living approach is how long it remains living. Most topics will be evergreen and once 'living' there is no likely reason for them to be off-ramped back to a traditional approach. There may be occasions, however, where there is a significant slowdown in research being produced so much so that the living approach is more effort than the potential return.

When to retire a topic area may also be a matter of prioritisation, and so re-running the topic areas through the early stage decision tree (refer to Figure 1), may be a useful frame to guide discussions and decisions.



5 | Conclusion

A living evidence approach presents an opportunity for IES to deepen their impact and create efficiencies by agilely responding to real need within the education community for timely information on what works to improve important educational outcomes.

It was evident throughout the design sprint workshops that within IES there is keen appetite to transition some of the existing WWC high-priority research areas to a living evidence approach. Further, through engagement with key stakeholders – contractors that developed existing WWC products, and education researchers more broadly – it is clear that there is a desire for the adoption of this innovative approach to better serve the needs of evidence users, both at the policy and practice levels.

The transition itself requires thoughtfulness in addressing the challenges that will come with necessary adaptations of existing practices, processes and structures. However, these challenges aren't insurmountable - and can be overcome in a way that ensures that IES's rigorous standards of evidence and quality are upheld.

Even if a comprehensive living evidence approach is not possible in the near-term, many of the approaches presented here could strengthen IES's work. Throughout the design sprint, a range of challenges facing IES were surfaced – from the need to build a broader base of stakeholders to understand demand for both new and updated practice recommendations, to the wide range of emerging literature within IES's purview, to the speed at which existing technologies and databases can respond to emerging evidence. Living evidence strategies could be deployed strategically to address – or at least start to address – some of these challenges.

For example, the use of standing panels in an "Evidence Hub" approach could be useful in understanding demand for new intervention reports and practice guides. At a more fine-grained level, as a pilot, IES could put in place the review and reporting procedures described above to make a manageable subset of high-priority intervention functionally living reports.

Such approaches could serve as initial steps that IES could take to build on and modernize the rigorous evidence synthesis and evidence building work they have been known for over the past 20+ years. Over time, and as there are continued advances in automated tools that make evidence synthesis increasingly efficient, IES may consider growing their work on living evidence to continue to meet their mission of bringing 'what works' to students, teachers, parents, and policymakers.



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7 | Appendices

Appendix A - Design Sprint Process

The design sprint formally kicked off in June 2024, convening participants from the Future Evidence Foundation (FEF), the Federation of American Scientists (FAS), and the Institute of Education Sciences (IES). Between June 2024 and January 2025, the FEF and FAS team hosted four workshops aimed at shared learning, brainstorming, and collaborative design.

Workshop #1, Define the Challenge, allowed participants to learn more about how living evidence works in practice, the current process for developing reports at the What Works Clearinghouse (WWC), and to begin to identify specific IES processes or activities where living evidence could be most beneficial.

Workshop #2, Identifying Key Areas, facilitated a deep-dive discussion about how the living evidence framework might apply to existing IES processes. Further, participants worked to collaboratively identify areas of focus for later workshops and the end goals for this process.

Workshop #3, Applying Living Evidence to Intervention Reports and Practice Guides, created space to explore the literature search process, how transitioning specific WWC products for living might have an impact, and how best to ensure that any living reviews the WWC may produce in the future can be most responsive to the needs of stakeholders.

Workshop #4, Seeking Feedback, focused on IES staff review and input into the early stages of this report, ensuring that the final product presented a set of options that are aligned with how a living evidence framework could most realistically support the work of the WWC.

Following the completion of these four workshops, the FEF and FAS team hosted an interactive webinar in February 2025. This one-hour session convened current and former WWC contractors, in addition to others interested in this process, to share the work of the design sprint with the broader field. The session also allowed FEF and FAS to seek feedback on a range of hypothetical approaches and processes to ensure that they felt pragmatic and realizable to stakeholders that had been directly involved in producing and using WWC products.





GRAPHIC RECORDING FROM WORKSHOP #1 | ILLUSTRATED BY KARINA BRANSON



GRAPHIC RECORDING FROM WORKSHOP #1 | ILLUSTRATED BY KARINA BRANSON



GRAPHIC RECORDING FROM WORKSHOP #2 | ILLUSTRATED BY KARINA BRANSON



GRAPHIC RECORDING FROM WORKSHOP #2 | ILLUSTRATED BY KARINA BRANSON



GRAPHIC RECORDING FROM WORKSHOP #2 | ILLUSTRATED BY KARINA BRANSON



GRAPHIC RECORDING FROM WORKSHOP #4 | ILLUSTRATED BY KARINA BRANSON





GRAPHIC RECORDING FROM WORKSHOP #4 | ILLUSTRATED BY KARINA BRANSON





Appendix B - Relevant Reading and Resources

Australia Living Evidence Collaboration (2025)

The Australian Living Evidence Collaboration is a 'world-first initiative that brings together leading experts in evidence synthesis, guideline development and digital technologies to build a next generation system for delivering reliable, accessible, up-to-date evidence in health.' The website contains a range of resources and insights into the development of living reviews and guidelines. Relevant to this paper, the below graphics demonstrates the shift in frequency and in workload between the traditional and living modes (Australian Living Evidence Collaboration, 2025).



Decision makers need constantly updated evidence synthesis (2021)

This article shares the role of living evidence in generating reliable and usable evidence to inform good policy decisions, drawing on the experience of COVID-19 guidelines in Australia, and identifies key aspects of building a system which supports up-to-date research evidence summaries. <u>Available here</u>.

Evidence Whac-a-Mole? How Living Evidence Hubs Can Strengthen the What Works Clearinghouse (2024)

Acting Director of IES, Matthew Soldner, outlined how a living evidence approach could strengthen and streamline the efforts of the WWC in this <u>September 2024 blog post</u>.

Living evidence and adaptive policy: perfect partners? (2023)

This paper describes the opportunities and challenges for policy-making when informed by living evidence, where a policy makers could access high-quality research summaries at the time of need - bridging the gap between evidence and practice. <u>Available here</u>.

Living systematic review series (2017)

This series provides an overview of the development of an approach to Living Systematic Reviews.

Series Living Systematic Reviews

- Paper 1 Introduction the why, what, when, and how
- · Paper 2 Combining human and machine effort
- · Paper 3 Statistical methods for updating meta-analyses
- Paper 4 Living guidelines recommendations



Methods for living guidelines series (2023)

The Methods for Living Guidelines series contains five papers exploring the implementation of a living approach, and learnings from the experiences of transitioning to a living approach. The focus is specifically on the development of living guidelines, using practical examples in the field of health.

Series Methods for living guidelines: early guidance based on practical experience

- Paper 1 Introduction
- Paper 2 Consumer engagement in living guidelines
- · Paper 3 Selecting and prioritizing questions for living guidelines
- · Paper 4 Search methods and approaches for living guidelines
- · Paper 5 Decisions on methods for evidence synthesis and recommendation development for living guidelines

Request for Proposals AHRQ Evidence-Based Practice Centers (2024)

In an August 2024 solicitation, the Agency for Healthcare Research and Quality requested proposals from organizations that wished to pursue contracts to complete systematic reviews for their Evidence-Based Practice Center program. This solicitation includes a number of potential products that contractors may be requested to create, including living systematic reviews. Section D.1.7 includes specific discussion of what AHRQ contractors will do if issued a Task Order to create and/or update living reviews. <u>Available for download on SAM.gov</u>.

Strengthen science by funding living evidence synthesis (2023)

A 2023 article authored by Jordan Dworkin and Julian Elliot shares the benefits of living evidence - including its role in supporting evidence-based decisions and policy making, as well as highlighting key obstacles and next steps towards living evidence implementation. <u>Available here</u>.

Strengthening Policy by Bringing Evidence to Life (2022)

In a policy memo produced in 2022, FEF Founder Julian Elliott and FAS Associate Director of Climate and Environment Hannah Safford outline the basic contours of a living evidence framework and share specific ideas for how living systematic reviews could be implemented across the U.S. federal government. <u>Available here</u>.

The Living Guidelines Handbook (2022)

Developed by the Australian Living Evidence Consortium [now Collaboration] (ALEC), the Living Guidelines Handbook outlines how living guidelines can be produced. Key areas of relevance include the decision to transition to living, LSR processes, considerations around publication and of transitioning out of a living approach.

Latest online version available here. This is a living document.

White Paper Living Systematic Reviews: Practical Considerations for Adapting Scope and Communicating the Evolving Evidence (2024)

The white paper documents the review of a living evidence approach in chronic pain management conducted by the Agency for Healthcare Research and Quality (AHRQ). It documents key considerations that were uncovered through the living review process including the ways in which scope was revisited, the identification of gaps relating to population groups and mitigating reader fatigue. <u>Available here</u>.



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