

Demystifying the What Works Clearinghouse: A Webinar for Developers and Researchers

I want to thank everybody for joining us today. I am Scott Cody, the deputy director of the What Works Clearinghouse. I also a vice president here at Mathematica Policy Research. In my role on the Clearinghouse, I oversee all of our outreach and communications activities, and this webinar is the first in a series of activities that we're rolling out that are intended to demystify and clarify what the Clearinghouse is really all about. We're going to be targeting two different groups with the activities. Some of these activities will be targeted at folks like yourselves who are the producers of the research that we review. Other activities are going to be targeted at the decision makers who use the Clearinghouse in their education agencies and their school districts and in their individual schools. So, hopefully today, we will be able to answer the questions that you have, but also, know that your questions and your feedback will be valuable to us as we continue with our efforts to clarify what the Clearinghouse is all about. So, thanks in advance for your active participation today. Joining me on this webinar today are Jill Constantine, she's the director of the What Works Clearinghouse and she's also a vice president here at Mathematica; and Neil Seftor, who along with me is the other deputy director of the What Works Clearinghouse. Neil is a senior economist here at Mathematica. For those of you are not familiar with Mathematica Policy Research, we are one of the contractors who administers the What Works Clearinghouse on the behalf of the Department of Education's Institute of Education Sciences, which we call IES. Joining us today from IES are Joy Lesnick, she's the associate commissioner for IES's National Center for Education Evaluation and Regional Assistance, as well as Diana McCallum, she's the project officer for the What Works Clearinghouse. Before we get into the content for today, let me give a quick overview of how the next hour will go. We have some prepared slides that we're going to talk through, and these slides are intended to answer questions such as what does the What Works Clearinghouse do, why do we need research design standards, how are Clearinghouse reviews conducted, what do we do to ensure quality and accuracy, and how do you submit a question about a review or how do you submit a study if you want it to be reviewed. These planned slides should take us about half of the time, about half an hour to talk through, and then we'll use the remaining time for questions and answers. We've already received several good questions in advance of the webinar, so thanks to those of you who submitted questions, and we encourage you to submit questions throughout the webinar as Suzanne said, using the Q&A tool on the webinar software on your screen. You don't have to wait until the question and answer session to ask a question. You can do so whenever it occurs to you and as Suzanne said, because we're recording this, we have all of the audiences in listen-only mode. That improves the sound quality of the recording, but it also means that the only way to ask questions is through the question-and-answer tool, so go ahead and use that. We've scheduled an hour for this webinar. If we don't make it through all of the questions we received, know that we will respond to your question via e-mail if we're not able to answer it during the webinar. We will respond to it via e-mail within a couple of days of the webinar. Also, the slides we're talking through and the recording of the webinar will be available on our website in the near future for download. So, with that, as an introduction, let me turn it over to Diana McCallum who is going to say a brief word about IES. So Diana, go ahead.

Demystifying the What Works Clearinghouse: A Webinar for Developers and Researchers

Thanks, Scott. Good afternoon, everyone. My name is Diana McCallum. I'm a project officer at the Institute of Education Sciences for the What Works Clearinghouse. I wanted to provide an introduction to WWC and offer context about where we're located and our broader mission. The WWC was established in 2002 to be a central and trusted source of scientific evidence on what works in education to improve student outcomes. The Clearinghouse was one of the first investments of the Institute of Education Sciences. In case you are not familiar with the Institute or IES, it is an independent non-partisan entity within the U.S. Department of Education that is responsible for research, evaluation, and collection of statistics about education. At IES, the What Works Clearinghouse is located in the National Center for Education and Regional Assistance or NCEE for short. In this center, our mission is to provide relevant and timely evidence for decision makers in education. In addition to the Clearinghouse, NCEE is home to the National Education Evaluations and the regional Ed Lab. Now, I will turn the presentation back over to Jill Constantine from Mathematica.

Thanks, Diana, and thanks very much to our audience. We're delighted that so many of you have chosen to join us for the webinar. As Scott said, I'm Jill Constantine, a vice president of Mathematica Policy Research and Mathematica's project director for the What Works Clearinghouse. I'm going to provide an overview of the WWC mission and processes, and then define some of the terms that we're going to use throughout the webinar to make sure we all have a common understanding. The first slide I'm going to talk about is the WWC mission and process. This diagram shows how we, and by "we" throughout, I mean the Department of Education, Mathematica, and literally our hundreds of WWC partners across the country, how we intend for the WWC to influence research and practice, and informs a lot of decisions that have been made with respect to standards, processes, and dissemination. In the middle is what the WWC does, and you'll hear more about that today. Right above the diagram is our mission, which really sums it all up. And that is to be a central and trusted source of what works in education. On the right-hand side of the diagram, you can see that all of our processes and standards are designed to disseminate information on what works in education to education decision makers. That's everybody, from front line teachers, school and district leaders, to state and federal policymakers. The goal is for the WWC to support decision makers to implement more evidence-based interventions, which will improve student achievement. Again, throughout the webinar, by "intervention", we mean **any** program or curriculum or practice or policy that may be used in a classroom or schools to improve student outcomes. This ultimate goal of improving student outcomes is the core of the WWC; you see it there flowing directly from educators. It's really the core of the WWC mission. It's why you in the audience work on developing effective interventions, designing studies to test and improve those interventions, and certainly why many of us are involved in the WWC. It's our highest priority. The stakes are high, which is why the Department of Education has invested a lot of resources into the independence, rigor, and transparency of the What Works Clearinghouse. Now, the left-hand side of the diagram reflects the crucial role that you, the producers of information--that is, for researchers and developers—play, and that you're obviously crucial partners in generating high-quality effectiveness research. The WWC has developed high standards for research, and we make all that information available on our website, along with other methods of

Demystifying the What Works Clearinghouse: A Webinar for Developers and Researchers

dissemination to support you to generate more of the type of research that meets standards, which means more information that is eventually being reviewed and going out to educators. So the goal is to get this virtuous cycle—virtual cycle, not virtuous cycle—of research and dissemination flowing to improve student outcomes. The diagram also reflects the information that flows back to the WWC. Decision makers give us feedback on what they need to know, and researchers are our partners in further developing and refining the research standards. Next slide, please? Next, I'll describe the type of activities the WWC undertakes, as well as what the WWC does **not** do. So, as part of its mission, the WWC reviews research that tests the effects of interventions on student outcomes or asks the questions “what works” or “did this work”. We don't just summarize the findings from all of these studies. We review studies against standards for high-quality effectiveness research and only report on findings from studies that meet that quality standard. Now, as part of our reporting, we document study details so readers have the appropriate context for the findings. So, examples of details include: was the intervention implemented as intended, with fidelity; where did the studies take place; for what population of students. These contextual factors are important for helping decision makers at all levels understand whether this intervention might work in their context. It's also important to clarify what the WWC does **not** do. We don't directly test or study interventions or commission new research on interventions. We summarize the existing research. We don't recommend interventions, specific interventions. We let decision makers use the information we've generated to decide for themselves. We also don't officially approve the use of interventions on behalf of any U.S. Department of Education programs. Next slide, please. So, this slide depicts the subset of all research that is the focus of the WWC. Education research obviously examines all types of important issues, from implementation, to measurement and assessment, to effectiveness. The WWC focuses on effectiveness research and reviews that research against standards for a well-designed study. A well-designed study in the context of effectiveness research is one where you can be confident that any improvement in student outcomes is due to the intervention being studied and not some other characteristic of the district or schools or teachers or students themselves. In the next section of the webinar, Neil will tell you about these types of research study designs. Right now, even with that subset of all research and education, the WWC has reviewed more than 9,700 studies on effectiveness and counting all of the time, and we sifted through hundreds of thousands of studies to identify those studies on the effectiveness of interventions. Other types of research and information are important. For example, information on how well an intervention was implemented to the extent that study authors report the information, we also report it. The WWC developed a study author guide with the type of information to help decision makers understand the context for study findings. So, it's actually a reporting guide that is designed to provide you—study authors, researchers—with best practices in reporting. So please take a look at that. That's among one of many resources available to you on the WWC website. With that, I'm going it were it over to my colleague, Neil Seftor, to talk a little bit more about WWC standards and processes.

Thanks, Jill. My name is Neil Seftor, and I'm a senior economist at Mathematica and the deputy director for content and standards for the WWC. I'll just be talking to you briefly about standards and

reviews and some of our products. So, after we decided to focus on effectiveness research, the question is “why do we assess the quality of this research”? The reason is fairly simple, and that is that not all research is equal in how reliably it can isolate the effect of an intervention. For example, let's look at two studies of dropout prevention programs being tested in some high schools in three districts. The first study at the top reports the treatment school graduation rate in the three districts. And clearly, you can see that District C is the highest; however, to know how effective the program is, we need to compare the results to what would have happened without the program. The second study (at the bottom) reports the graduation rates at both treatment and comparison schools. From this comparison, it's clear that the program in District A has the largest affect, raising graduation rates from 20 to 40%, while the graduation rate in District C was unchanged. The fact is that decision makers are being pushed to make choices based on evidence, but they often don't have the time or the background to figure out which research they should believe. The WWC tries to fill that role by identifying high-quality research and summarizing the findings. We try to do it in a systematic way.

Next slide, please. Every WWC review is guided by a review protocol. This is a document that specifies the research question and defines scope of the review. For example, for the high school math review, the research question we're trying to answer is, “which interventions are effective in increasing the learning of math content and skills among high school students”. The scope then sets the parameters for what will be included in the review; for example, who is considered a high school student? What defines a math intervention? What kinds of math content and skills are included, and how will they be measured? The protocol also describes the process for identifying and screening studies, as well as some other aspects of the review. For example, it describes how studies will be identified, such as, which databases we'll search and which keywords to use. Just note that the WWC includes all published and unpublished literature independent of peer review. The protocol also specifies any eligibility criteria, such as geographic restrictions or time; the WWC typically uses a 20-year review window to focus on the most educationally relevant studies. But each review team has the discretion to change that, if warranted. Finally, the protocol may define any statistical considerations of the review, such as specific requirements for defining a well-matched comparison group. All of our protocols are developed in combination with substantive experts and are available on our website. For the WWC, four types of study designs are eligible for review: Randomized controlled trials, quasi-experimental designs, regression continuity designs, and single-case designs, because each of these designs, done well, can provide causal evidence. As Jill noted, causal evidence allows us to attribute the effects of the intervention and not something else. Other types of studies that do **not** provide a causal link between the intervention and the outcomes are **not** eligible for review. Some of these include: correlational studies, case studies, implementation studies, and testimonials. For each of the study designs that are eligible for review, the WWC has a set of standards it uses to determine if the study is high quality.

Next slide. The WWC standards are a set of criteria developed by a panel of experts to assess research quality and assign a rating to a study. There are three possible ratings. The highest, meets WWC standards without reservations, is reserved for studies with the highest degree of causal validity. The next, meets WWC standards with reservations, applies to studies that provide causal evidence, but with a lower degree of confidence. The final rating, does not meet WWC standards, is given to studies that have **not** demonstrated a causal link between the intervention and the findings. The standards are a set of rules applied by certified reviewers to each study to determine a rating for

Demystifying the What Works Clearinghouse: A Webinar for Developers and Researchers

that study, and these are available on our website in the Procedures and Standards Handbook. As our goal is to be thorough, we often submit questions to study authors regarding unreported or unclear information; however, we do not ask for new analyses. This information helps us determine the correct rating for the study and presents the findings accurately. Any information we obtain from study authors is described both in our review and in the report. The reviews that we generate by the application of the standards support a variety of efforts. Next slide, please. First, there is a master review guide which documents all of the determinations made by the review team and provides justifications for the study rating. These reviews of individual studies are then used in a variety of products, including single-study reviews, intervention reports, and practice guides. All studies that are reviewed are cataloged in our Studies Database, which provides the full citation and study rating, along with a link to the protocol used for the review. This database is available on our website and is searchable by author or keyword in addition to topic, publication type, or even study rating. The reviews of any individual study may be done in a short period, such as a week or two; however, the time from the initial literature search through the final report varies considerably based on the product. Single study reviews and quick reviews might be done relatively quickly, as they focus on one study, while practice guides and intervention reports may have to go through hundreds of studies before they're finished. Part of that time is devoted to making sure we're producing reviews and products of the highest quality and accuracy. Next slide, please. This is accomplished by multiple layers of review. First, certified reviewers review each study. These are reviewers who have attended WWC training on standards related to specific study designs and passed a rigorous certification process. After their initial independent reviews, the reviewers meet with a third senior reviewer to discuss any areas of discrepancy. The team leaves, then verifies the study findings and deals with any remaining issues after reconciliation. When all studies have been reviewed for a product, the team lead drafts a report, which is then subject to several layers of internal quality analysis. Only then is the report submitted to IES, who conducts their own review and sends it to external peer reviewers who are not known to the WWC staff. This extensive process uses trained reviewers working both independently and collaboratively, along with internal and external review, to ensure the standards are applied consistently and correctly across reviews. And now, I will turn it back to Scott, who will deal with— answer some of the questions related to, questions about our review processes and our studies.

Great, thanks, Neil. Yes. Before we get into the actual questions and answers for this webinar, let me talk about if you have a question in the future that you want to ask of the Clearinghouse, how to go about doing that. If you have a question—I'm gonna advance, actually, to the next slide—the best way to reach us is through our, what we call our Help Desk. You can get to the Help Desk through our Contact Us page. So, if you go to anywhere on the website, you select About Us, and then select Contact Us. You will get this form that you can then use to submit any question to the Clearinghouse. Our Clearinghouse Help Desk will respond promptly to questions that you submit. You can also use this form to submit a study, if you would like to submit a study for review. And you can select Submit a Study from the dropdown box and paste the URL of the study, if the study is posted online. You can paste that in the comment box, or you'll be given an option to upload the document itself and send

Demystifying the What Works Clearinghouse: A Webinar for Developers and Researchers

that to the Clearinghouse for review. If you have a question about a specific review that we have conducted, either you think that we have misinterpreted the study or you think we have applied the standards incorrectly, definitely please contact us about that. The quality, the accuracy of our reviews is critically important to us, and if we have gotten something wrong, we want to know about it, we want to investigate it. If you do submit a question, about an individual review, the Help Desk will respond and let you know that they were forwarding the question on to what we call our quality review team. The quality review team will assign the question to a set of reviewers, a set of Clearinghouse reviewers, who were not involved in the original review. They will conduct a separate independent review of the study along with your questions or concerns and then make a determination whether the review was done correctly or not. If they determine that an error was made in the original review, they will not only let you know, they will revise the published Clearinghouse report and replace it on the website. If they determine that the original review was done correctly, they will respond to you and give additional information and additional justification for the original review. And so, that's how our quality review team operates. Note that not all questions get forwarded to the quality review team, just those with a question about a specific review, whether we interpreted the study correctly or whether we applied the standards incorrectly. With that, I think I'm gonna move on to the question-and-answers. We received several good questions. For those of you who missed the beginning, if you want to submit questions, use the Q&A tool on your webinar software. Before I get into the questions and answers, let me talk about some resources that are available on the What Works Clearinghouse website. We have our Procedures and Standards Handbook, which goes into great detail about all of the individual standards that we use when we review studies, as well as the procedures we use to review studies. We also have a Reporting Guide for study authors and offers; if you're writing a report and want to make sure you're highlighting the things we're looking for, use the Reporting Guide. You can go to our website and download the actual Study Review Guide that our reviewers use when they're reviewing a study, as well as the instructions that they're following. As I said, you can always contact the What Works Clearinghouse Help Desk if you have questions about anything. And then finally, you know, you can always follow us on Facebook, follow us on Twitter, or sign up for our newsletter, our electronic news blasts, through the website to learn about new products and new developments on the What Works Clearinghouse.

OK. So, with that, I'm gonna start reading off the questions that we've received both today and prior to today. The first two questions are actually related, and I'm going to ask both of these to Neil. The first question is: I've got a study I want reviewed. If I submit it for review, when can I expect to see the results? The second question is: How does the What Works Clearinghouse determine what review efforts are underway? So, Neil, that's for you.

Thanks, Scott. Those are very good questions, and are related by the fact that we have to set priorities. There's a wide range of topics covered by education research, each of them with many studies. While the WWC continues to review studies, generating products in both existing and new topic areas, we

Demystifying the What Works Clearinghouse: A Webinar for Developers and Researchers

can't possibly cover all of the research in every topic all of the time. So, we have to set priorities. Each year, we work with IES to identify a set of topics for which there is interest and research. The current broad topics we're covering are literacy, early childhood education, special education, and teacher quality. Then, within each topic, we conduct a comprehensive search of the literature and using the results of that search, including the number and designs of the studies we identify, as well as information on whether we already have a report for an intervention and how old it is. We prioritize interventions for review in an area. We encourage you to submit studies so that we're sure to include them when we're making these decisions about reviews. However, when you submit a study, the timing of its review depends on the review efforts underway. If you submit a study in a topic that's currently active for an intervention that we have already identified for review, your study may be reviewed relatively quickly. Otherwise, it will be cataloged for use when we're setting priorities in the next year. All of this describes how we review studies for intervention reports. We also conduct reviews of individual studies that receive substantial media attention—those are our quick reviews—or were sponsored by IES, and those feed into our single study reviews.

Neil, we got a follow-up question while you were talking. Can a study be submitted to more than one review effort at the same time?

When a study is submitted, our reviewers read through the study and categorize which area it should fall into. For example, our literacy area is actually broken up into two areas. There's a beginning reading that covers kindergarten to third, and an adolescent literacy that covers fourth and higher. In both of their protocols, there are specific rules that decide whether a study should fall into the beginning reading or adolescent literacy. So, when the study is submitted, we consider the areas in which it could be reviewed. That same study may have an ELL population or a special education population and may be reviewed in those areas. It may also have a math outcome and be reviewed in those areas. So, we try to assess that every time a study is submitted.

Great. Thanks. We have received several questions about whether this webinar will be available, and the answer's "yes", we are recording the webinar and in the immediate future, it will be available for download from the What Works Clearinghouse website.

OK, so, the next question we've received—this one's for you, Jill—the question is: Can I, as a study author, request that the What Works Clearinghouse **not** review my study or not include my study in a review that doesn't focus on my treatment intervention?

Demystifying the What Works Clearinghouse: A Webinar for Developers and Researchers

Thanks, Scott. Yeah, that's a good question. It's actually one we get, not only from study authors, but also developers, like the developer might indicate they don't want a product reviewed, or they want a particular study included or excluded from the review. So, if research is publicly available, then generally, no, we don't honor requests to ignore specific studies. Given that the core of the WWC mission is to be trusted and objective, all research must go through the same identification and screening process to determine if it's eligible for review through the process that Neil has just described to you. However, if research is not publically available, or it's clearly in draft or preliminary form—for example, slides from a conference presentation—and the study author clearly indicates that the study findings are preliminary, they don't yet stand behind the finding, that wouldn't be included in a review. In addition, we work with developers to make sure we've identified all relevant research before a review. So, we'll identify a list of studies against the process Neil described, and we'll give that to a developer and say, "We've located all these, do you know of any others?" So, we do make sure that we have been comprehensive and systematic, 'cause that's crucial to creating a comprehensive and objective review.

Great. Thanks, Jill. We did get a question about the quality review team reviews that I was talking about, and that question is: If a quality review team recommends a change to an intervention report, is that noted in the report? And the answer is "yes". We will, in an endnote in the report, describe that a change was made and why the change was made. Another question here for Jill; this is about the fidelity of an intervention. There's research showing that fidelity is important, and a lack of fidelity jeopardizes the conclusions that can be drawn from the study. What information does the What Works Clearinghouse capture about fidelity, and will the What Works Clearinghouse ever factor fidelity into the standards?

Those are good questions. A couple of questions, so let me take them each in turn. First, we agree, the WWC agrees, that understanding how an intervention was implemented with fidelity is important. And, as mentioned earlier in the presentation, we do report on implementation to the extent it was reported in the study itself. However, currently, the WWC doesn't have any plans, for example, to **only** report on studies, only report on finding studies that meet implementation standards, and that's for two reasons. The first reason is, most of the effectiveness research we review takes place in real classrooms, in real schools, with real students. Variations in implementations can and do occur, and this is actually critical information for educators to understand. For example, if a curriculum wasn't implemented with fidelity because it's too difficult to implement, or too resource intense, or any number of reasons, the WWC believes that is part of what should come out of the review of the research. In other words, a principal shouldn't be misled into thinking they can expect typical results if that's not what's happening out there on average. So, we don't have any plans to only report on studies that meet—who somebody says—the developer or something that says, "Yes, this was implemented the way we say". We will continue to report on all effectiveness research. The second reason is, actually, many authors don't fully report on implementation, or sometimes don't report on

implementation at all. So, if we left those studies out, here again, we would be eliminating some useful information on whether that intervention was effective. So, that said, the WWC would like to both report better information on implementation, so that's why earlier I referenced that Guide for Study Authors that you see here on your Resource page. We would love for study authors to more systematically report on implementation, then **we** could more systematically report on implementation. And then, we also want to think about ways to systematically indicate whether implementation was strong or weak, along some objective standards. And we welcome input on that issue and how we would think about and develop that issue further.

Great. Thanks, Jill. OK, another question. This one's for Neil. Given that the What Works Clearinghouse reviews different types of studies—for example, randomized controlled trials and single-case designs—are they weighted in the same way? In other words, are the findings from a single-case design weighted the same way as a randomized controlled trial?

That's a great question. So, to date, all of our reviews, all of our reports have only had evidence from group design studies; those are the RCTs, QEDs, and RDDs. We've been reviewing a lot of single-case designs in our special education area and we found very few that met standards so far. So, let me address this in two separate questions. For all of these group designs, even the different ones, RCTs and QEDs, as long as they meet standards, either with or without reservations, we treat them similarly in our reporting of their findings and how we describe them. There's no waiting, there's no preference given to RCTs over QEDs. That said, the design of the studies can affect the intervention rating. The highest rating for an intervention of positive effects can only be achieved if the studies have a strong design and meet that highest threshold. We do have a rule that determines how much evidence is necessary from single-case designs. How many studies there are, how many different sample numbers there need to be, in order for us to have a mass of evidence from SCDs that we think is worth presenting as an aggregate and driving conclusions from. To this point, none of the interventions we've reviewed had enough evidence to reach that threshold, and we are working with single-case design experts to determine the best way to present single case findings once we do reach that threshold. Beyond that, if there are interventions that have both group designs and single-case designs, that will be an additional hurdle. We'll have to figure out how to present those as well.

Okay. Thanks, Neil. The next question, this one's for Jill. How do you become a certified reviewer? Is there a need for reviewers in the education field, and is there a need for reviewers in other fields?

Let's see, how do you become a certified reviewer? I am so glad people want to be certified reviewers. The IES, through the What Works Clearinghouse, does sponsor trainings for people to become certified

reviewers. And generally, when a training is available to the public, it will be announced on the WWC website, and there will be a process that you can put in your information—there is an application process, you know, some information you present about yourself, because the WWC does look for some education and criteria background in terms of who is likely to be able to successfully undertake and complete the certification process. There will be an announcement, you can submit information, you can be selected for a training session. A few of those occur throughout the year, and some years, we have more demand for the trainings than we can meet, so we try to just offer them at a steady pace so we can meet that demand. So, I would say keep your eye out for announcements on trainings, and the WWC sponsors trainings for people who will review research in education. We don't focus trainings or focus the reviews on areas outside of education. I don't know if, Diana, you wanted to add, I don't know if Diana wanted to add anything about that for training or other ways, or other thoughts about advice for becoming a certified reviewer?

So, Jill, I think you covered everything. The only other thing I would add is, if you sign up for our News Flash, that's the regular way we announce the training. So, definitely sign up for that, and you'll find information about those as they come up.

Excellent. Thanks. Okay, the next question, this one is for Neil. The context of a school or district is important in understanding the results of a study. How does the What Works Clearinghouse generalize the findings of individual studies to a broader population of schools and districts?

So, we certainly agree that the interpretation of study findings is affected by context. So, we try to provide some guidance for that interpretation for both individual studies and a body of research as a whole. Individually, the rating of a study is a determination of internal validity. That is, has the study provided causal evidence for the specific sample it examined? So, by itself, the study rating says nothing about whether the findings can be generalized. However, to make the context of those findings clear, we provide extensive detail on the setting and the samples, the implementation of the treatment, and the comparison condition for each study that contributes findings to our report. Then, looking across studies, we use several approaches to provide some overall context of the findings related to each set of outcomes. On the front page of our intervention report, we report the number of studies and students that underlie each of the findings. These numbers are also used to determine what we call the "extent of evidence", which gives you some idea of the breadth of the evidence supporting the findings. Most of the findings in our reports are based on a small extent of evidence. We also present the range of findings, so you can see whether the findings were consistent. And, finally, the intervention rating is based partly on the number of studies and the strength of their designs, because more findings from studies with strong designs provide more confidence that the findings may be generalizable.

Great. Thanks, Neil. Okay, the next set of questions is for Jill. I'm gonna ask two questions that are somewhat related. The first is: Sometimes the findings of What Works Clearinghouse reviews differ from published meta-analyses. Why is that, and why are meta-analyses findings not cited in the What Works Clearinghouse report? The second question is: If the What Works Clearinghouse reviews—review of a study—differs from the author's interpretation of the findings, why are the authors not given the opportunity to respond to the What Works Clearinghouse interpretation?

Okay. Let me take the questions on why might the findings from a WWC systemic review differ. That's a great question; we get that a lot. You can really see where that would cause some confusion in the field, especially when you get very different findings. There can be reviews out there that said a particular product is effective, and ours might say, "Well, actually, there's no evidence" or it might say, "We don't find evidence of effectiveness", so there is a number of reasons why findings from a WWC systemic review might differ from others. But, the key is, if the reviews are guided by protocols and those are publicly available, people should actually be able to figure out why the findings differ, and that's one of the main reasons why all of the protocols for the WWC reviews are available on the website. The number of reasons this could occur—there's two particularly common ones, let me talk about those. The two most common reasons the WWC findings may differ, are the scope of the review and the standards for the research. So, as Neil has described, the WWC reviews research on interventions under different topic areas, and those topic areas are divided up in ways that our partners have indicated are useful to educators. For example, we conduct reviews of reading interventions for beginning readers—you know, children in grades kindergarten through third grade—separate from our reviews of older children, grade 4 and up. So, a summary of research focused on getting readers may include different studies than one on older children who are already reading, and that could generate different results than, say, another systematic review that just sort of looked at all of the grades together. Fact is, the other many reason, I think, is we discussed, we review research against the standard for high quality research and we only report findings from studies that meet those standards. Other's reviews may include all of the effectiveness research, and so that can certainly generate different findings. So, why we don't, then, just take a meta-analysis and include that in our review? It kinda goes back to that same core. So, we do look, and we will take a meta-analyses; that's one of the ways that we'll make sure we have covered all of the research in an area—a meta-analysis, obviously a very nice listing of all of the research they referenced—so that helps us identify all of the research out there, but the WWC, as part of being objective and independent, has to conduct its own review of all original studies. So, we will conduct those reviews again under the scope of the different areas and then against the standards the WWC has for effectiveness research. So, that's kind of why systematic reviews and meta-analyses differ. Separate from that, the WWC might report study findings a little differently than an author does, and again, that's for a few reasons. Some of it, again, has to do with our standards. There might be some outcomes, for example, if you're looking at randomized controlled trials, we have a specific outcome, a standard on attrition, and sometimes attrition can vary on certain outcomes. If there was more attrition than what's acceptable on a particular outcome, we

Demystifying the What Works Clearinghouse: A Webinar for Developers and Researchers

won't report on that outcome. There's also some corrections that we do to make sure that people haven't assumed some statistical precision, for example, that they don't have and if the author hasn't made adjustment for the fact that, for example, students are clustered in schools, we will make that adjustment. We also make some adjustments for combining findings across studies. So, in our reports, we will note if our findings differ from an author and we will say why. Now, an author **can** respond in that as the process Neil and Scott described to submit a question or clarification in if they think we have not gotten that right. But, there again, we will do things--the reason we might be different, we will apply our standards, and that just may simply differ from the standards that the author was using for reporting.

Great. Thanks, Jill. Okay, the next question, this one's for Neil. How would the What Works Clearinghouse review a multiyear intervention, that is, an intervention provided for two consecutive years?

I guess there are two ways to view that. One would be an intervention that, as part of its design, lasted two years and it was required to be given for two years. In that case, we would look at the before and after and if the design met standards in terms of attrition and equivalence. We would report it as we would any intervention. The more common question is an intervention that can be used repeatedly over time, such as the reading program that is used in kindergarten and first and second. In that case, there might be intermediate outcomes, such as the end of each grade, and long-term outcomes. Each review area prioritizes one type of outcome as being the primary one in their reports. Some of them, like reading, prefer measurements that are immediately after the intervention is finished, and some of them, like dropout prevention, prefer longer-term measures at the end of high school. In a case where there are multiple outcomes over time, one of them is used as the primary finding of the report, and that one contributes to the intervention rating that the WWC gives. All of the other outcomes and measures at different points in time are presented in supplemental tables so that the information is there for readers who want to know the effects at different points in time, but only one of those can contribute to the rating itself.

Great. Thanks, Neil. The next question, this one's for Jill. What is the capacity of the What Works Clearinghouse to conduct reviews, what are the limiting factors, the budget, the number of qualified reviewers, etc.?

That's a very interesting question. I'll start, and if Diana from IES wants to weigh in, I'll certainly give her that opportunity. It's a good question. If you mean by capacity, kind of the infrastructure, personnel capacity, it's actually not the number of certified reviewers. I have been involved in the

Demystifying the What Works Clearinghouse: A Webinar for Developers and Researchers

Clearinghouse a long time, and I like to joke: “I have children younger than my involvement in the Clearinghouse”. I think early on there was some capacity constraint around certified reviewers, and that’s such a rigorous process. That’s why I love the question of how can I become a certified reviewer. IES has invested a great deal in training the last number of years, so that’s not much of a capacity constraint anymore. So, it really is—I like to joke that the Clearinghouse resources are **not** infinite—it’s just that there is really only so much that can be done in a year. So, all that kind of prioritization that Neil has discussed really is...there’s not much that can be done in a year, just purely resource-wise, and obviously, there’s such a vast amount of literature out there, even effectiveness research in just education areas. So it's really that, it’s really the amount of research that’s out there and the amount of resources we can devote to reviewing research. There’s a little bit of timing issues around some aspects of research, but I wouldn’t say that’s the main constraint. I’ll let Diana also respond if there is anything else that -- any other information she thinks in responding to that.

Diana, if you're on mute, you can unmute. Okay. I think you covered it, Jill.

All right.

And the next question, this one’s for Neil. Are all studies that are submitted to the RCT registry reviewed by the What Works Clearinghouse? How I can know if my collaborators have already submitted the study? You might want to explain where what the RCT registry is.

Sure. Let me take a step back to make sure everyone knows what it is. The WWC Registry of Randomized Controlled Trials is an online database we have of completed and in-progress RCTs in education. It is designed to help schools, districts, researchers, and developers identify research regarding the effectiveness of education interventions. Researchers can submit their own information about their studies to be included in the searchable database, and some of the details that they submit include the name of the principle investigator, the start and anticipated end dates, details about the sample and the study design, and the primary outcome. To know if a study has been submitted, you can search based on author or keyword. While we encourage you to submit information about your studies to be included in the database, that allows us to be aware of upcoming research, it does **not** mean the study will be automatically reviewed by the WWC. When it's finished, your completed study can be submitted through the website, or it might be identified for review during any of our literature search processes.

Okay. Thanks, Neil. The next question, this one is for Jill. Does the What Works Clearinghouse only review research on K-12 education, or does the Clearinghouse also review research on higher education?

The Clearinghouse does review research on K-12 and postsecondary education. It's only in more recent years that more research is being reviewed on postsecondary education. We do have some products focused on that. There's that practice guide that kind of spans high school and postsecondary helping students navigate the path to college, and there have been reviews of single studies on a number of college access-type programs. The WWC has chosen to expand postsecondary as one of its topic areas, and it's doing more reviews in that area. Hopefully, soon, within the next year or so, it will start to expand the type of products that they're doing for postsecondary, including more practice guides and intervention reports on particular postsecondary interventions. It's one of the areas we have tried to expand to beyond the core K-12 areas.

Jill, this is Diana. I'd like to just to add to that. At the beginning of the webinar, Mathematica mentioned they were one of the WWC contractors. In the past year, we have had DSG, Development Services Group, join the WWC contractors, and they focus on postsecondary education. If you go on our website and look under Topics, you find some of the recent releases under postsecondary education. And, as Jill mentioned, that's sort of getting underway, and the postsecondary work will be coming out more in the near future.

Thanks, Diana. Ok, another question. This one's also for Jill. Some studies report outcomes from a short period right after the intervention or within a few weeks. Other studies may collect outcomes months later. How does the What Works Clearinghouse decide what outcome periods to focus on?

In order to summarize findings across studies, the WWC sometimes has to prioritize different timeframes reported in the studies. This is one of those decisions that will be documented in the protocol for that topic area. But it's really decided upon the consultation with experts in the field. So, some areas may focus on relatively short outcomes, for example, some of our areas that focus on behavior, may focus on very short-term outcomes; when you're looking at whether an injurious or disruptive behavior has stopped, it's appropriate to look at very short-term outcomes. But some focus on much longer-term outcomes; for example, our dropout prevention area focuses on high school completion, and that can occur, obviously, years after some of the students are receiving the intervention. So, in the WWC summary reports, we usually prioritize a particular time range (again, that's in the protocol). I think, as Neil suggested, we can report on other outcomes from different time periods, but we'll put that in the supplemental appendix; in other words, we try not to mix outcomes

Demystifying the What Works Clearinghouse: A Webinar for Developers and Researchers

from different time periods. And then when we review single studies, then it's much easier to just simply report on outcomes from multiple timeframes and just make it clear that they're from the timeframes. So, the short answer is, it varies, but you can find out from the protocol what the time, what the priority will be for reporting on outcomes for the WWC.

Great, thanks, Jill. We are approaching 3:00, so this is going to be our last question. This one's for Neil. Does -- it's a two-part question. Does a study need to have a minimum sample size to meet What Works Clearinghouse standards, and a related question we got, does a study need to be published in a peer-reviewed journal in order to be considered for What Works review.

Those are both easy questions. The answer is "no". There is no minimum sample size, as long the study meets our standards for attrition, if that is required for equivalence, then we will report the findings in our report. Ideally, we'd like studies that are larger and, even more ideally, we'd like several studies examining the same intervention. As we go over time and have more reviews, we're building up education literature. As for whether the studies need to be peer-reviewed or in a peer-reviewed journal, no, we try to be comprehensive in our systematic review. We reach out to working papers and organizations that do education research, and we include dissertations. We look for any type of research that is publicly available whether or not it is in a peer-reviewed journal.

Great. Thanks, Neil. We are out of time. I want to thank everyone. We have received, unfortunately, we were unable to respond to all of the questions we received. We did receive a lot of very good questions, and we will be responding to those of you who, if we couldn't answer your question, by e-mail. We will also compile some of the more common questions and our answers and distribute that to the folks who registered for this webinar, so you can look forward to that. As a reminder, if you have any questions in the future, feel free to go to the Clearinghouse Help Desk and definitely sign up for our news blast and follow us on Twitter and Facebook to learn more about what is going on the What Works Clearinghouse. So, on behalf of all of us that work on the What Works Clearinghouse, I want to thank everyone for giving us your time today. Thanks a lot.