



Refining Your Remote Learning Strategies Using a Data-Driven Approach: The Evidence to Insights Coach Webinar Transcript

[Webinar producer]: Hello, everyone. Thank you for attending today's webinar. Before we begin, we would like to cover a few housekeeping items. At the bottom of your audience console are multiple application widgets you can use. You can expand each widget by clicking on the maximize icon at the top right of the widget or by dragging the bottom right corner of the widget panel. Additional materials, including a copy of today's slide deck, are available in the resource list widget indicated by the green file icon at the bottom of your screen. If you have any questions during the webcast, you can click on the Q&A widget at the bottom to submit your questions. Please submit questions throughout the webinar. You do not have to wait until the Q&A session. If you're having technical difficulties, please click on the help widget. That's a question mark icon that covers common types of issues. You can also submit technical issues via the Q&A widget. Please note, most technical issues can be resolved by pressing "F5" or "Command R" on MACs to refresh your player console. Finally, an on-demand version of this webcast will be available approximately one day after the webcast using the same audience link to access today's event. A full 508-compliant version of this deck will be available via the REL Mid-Atlantic website in approximately two weeks. Now I'd like to introduce Brian Gill. Brian, you have the floor.

[Brian Gill]: Thanks very much, Brian. Hello, everyone. Thanks very much for joining us today in this very difficult and challenging time when I'm sure you have many things on your plate. We want to make this worthwhile for you. I'm Brian Gill. I direct the Mid-Atlantic Regional Educational Laboratory, which is one of ten regional labs that are sponsored by the U.S. Department of Education to work with state and local stakeholders on research whether that means conducting it, understanding it, interpreting it, or applying research to their own problems with educational policy and practice. Today, our webinar is one of a series of webinars and other resources – tip sheets, FAQs, and other products – that are coordinated across all ten of the regional laboratories with the aim of rapidly providing some resources to help educators and policymakers in responding to the current crisis. Now, of course within the current crisis, with school buildings closed across the country and educators working frantically to move instruction online, conducting research might be far from most people's minds. As you know, there is a hunger for knowledge about how to do remote learning well; and that's what a lot of the resources in this REL series are about. They're trying to get at that.

Along with that though, this is a time when it may be especially important for educators in the field to make contributions to the research base for a couple of reasons. First of all, we have to admit that although we can provide some guidance from existing research, there isn't nearly enough good evidence available on what works best in remote learning, on what works best in a situation like this. We've never faced this before, and therefore there hadn't been the opportunity to do much research in the past.

Most of the existing research on remote learning involves comparisons to regular classroom instruction; but, of course, the problem is regular classroom instruction isn't an option for you at the moment. Educators across the country don't actually need to know whether something works as well as regular classroom instruction. They need to know in an environment in which there *is* no regular classroom instruction, what are the best ways to keep students engaged and to keep them learning; and there's not nearly enough known about that, unfortunately.

In addition, with state assessments canceled for this spring, a lot of the student outcomes, a lot of the data that we researchers typically rely on, aren't going to be available. Now that said, we think that there is in all this an opportunity, at least for some educators out in the field. To the extent that you are working in remote learning systems that are able to collect formative data on student learning and student engagement, and anything else about how your students are doing, you can actually help to test different strategies and practices. You can find out what is working best for your own students and, I hope, share those findings with other educators around the country.

Now, our aim today is to tell you about an analytic tool called the Evidence to Insights (e2i) Coach that can help you do that. For that purpose, I'm going to turn it over to my colleague, Mikia Manley, a researcher at Mathematica and REL Mid-Atlantic, who has lots of experience working with the Evidence to Insights Coach and working with school districts using it. She's going to tell you what it is and how it works. Then at the end, we'll save some time for your questions. Thank you again for joining us.

Okay, Mikia, all yours.

[Mikia Manley]: Thanks, Brian. I just want to echo what Brian was saying and thank you all so much for joining us today. As he mentioned, I know there's a lot of demand for your attention, so we really appreciate you making the time for this.

My goal is to make this webinar really useful and informative so that when you log off today, you have some really concrete ideas of the steps that you can take to make data-driven refinements to your remote listening strategy and that you can position yourself well to learn what's working or did work the best during these school closures, whenever you have the time and the space to start considering that. So, our goal for this webinar is really to give you those strategies that are going to be helpful at different timepoints and acknowledge that there are many priorities that you guys are all thinking about and need to address in the near term. So, we're going to talk a little bit about how we can take a flexible approach there.

We'll spend the next 15 minutes or so discussing some of the key research questions that you might be thinking about during COVID-19, and then I'll give you an introduction to a free tool that you can use to approach answering those questions. Then we'll go over some specific things that you can start doing now to generate that evidence. We'll leave, as Brian mentioned, about 15 minutes at the end for your questions.

Before we jump in, I just wanted to preview a few terms that will come up over the course of this webinar. We're going to be talking about strategies today that are applicable to remote learning broadly, but we'll be mostly focused on examples from virtual learning because virtual learning really provides a lot of opportunities for data-driven strategies without introducing many additional data collection needs for schools and districts right now and can lower that burden for them.

We'll also refer to a few times to asynchronous and synchronous learning. Asynchronous here, we're just referring to teaching or learning that's happening at different times for students. Synchronous learning is referring to teaching and learning that occurs at the same time with teachers and students together.

I want to kick things off by digging into some of the challenges that schools and districts are facing right now, and what questions they have to best meet the needs of students and families during this time. I'm sure that many of you on this webinar today will be familiar with a lot of these challenges, as you're likely grappling with them in your own context on a daily basis.

Just to situate the context we're in, every state in the U.S. at this point has recommended or mandated school closures. Recently, many states across the country have announced that these closures will be in place through the end of the school year. What this means is that tens of millions of students have been rapidly transitioned from in-school to remote learning. I have to say this; seeing how our schools have been adapting to these changes has really been inspiring – watching people quickly figure out ways to provide meals and personal devices and enrichment and academic support.

I also saw earlier this month that a poll from Common Sense Media came out, and it said that 41% of teens had not attended any virtual or online classes. I think what that tells us is that for many districts, they're still

in the really early stages of systematically moving instruction online and are facing challenges around how to get students engaged in this instruction. So hopefully over time, we'll see more students engage in remote learning offered by their schools; but it may take some really targeted strategies to help engage the millions of students who aren't logging in right now.

What I think is particularly important to remember during this time is that there are so many stakeholders in the education space whether that's students and families, teachers and administrators, vendors, researchers like myself, or other professional associations. All of these stakeholders share a primary objective of finding the best paths forward for reducing the mental and emotional toll on students and figuring out how to support their academic needs as best as possible.

I think people are rightfully worried. Families are worried that children will lose out on making academic progress, and schools and districts are really worried that some of our most vulnerable students are going to be left behind. This concern for students isn't unwarranted. In one study that came out earlier this month, researchers from the Northwest Evaluation Association looked at testing data from 2017 and 2018. Using this data, they projected the growth trajectory for students under two scenarios, which may be familiar to some of us from research on summer learning losses. The first scenario that they considered was a melt in which students basically gained no ground during the school closures. The second scenario was a slide in which students lose ground academically during these closures at a rate that's similar to what we've seen in the past over summer breaks. What their research found was that if students returned to school campuses in the fall without continuity of instruction during these closures, they could have retained only about 70% of their reading progress compared to a normal year; and in math, depending on the grade, students could actually lose anywhere from half to all of their academic growth from the last year compared to normal student growth.

I think that this really drives home the point that the decisions that are made in the coming weeks are going to be really critical for mitigating these losses as much as possible. There are many, many challenges that have presented themselves in terms of navigating the decision-making process. I think all of you are likely to be experts in some or all of these challenges by now, like how you can promote student health and wellbeing through providing meals and other services. You're thinking about how to navigate constantly-evolving federal and state guidance; for example, how do you provide for an appropriate public education or waiting for waivers for state exams and other accountability standards.

You're thinking about the financial health of your school and district in reviewing your current budgets, figuring out what, if anything, could be rolled over to next year. Of course, you're thinking about academic services, like whether you provide new content or what media you use to deliver that content, and how you can provide learning while navigating both familial and health demands placed on your teachers.

These conversations are also focused on equity and supporting students who might have limited Internet access or are at home without computers or have special education needs. Finally, in the midst of this transitions to fully remote learning, you're thinking about student data and privacy for technology tools and trying to balance this rapid response with the thorough vetting of each tool.

So, this is a lot for anyone to be dealing with; and navigating all of these challenges, responding to them, is a Herculean task. I wanted to mention this now not to tell any of you anything you don't know, but to really acknowledge and honor the truly amazing work that all of our schools and districts are doing right now and to let you know that it's okay if the data analysis and generating evidence isn't number one on your priority list. We just want to give you the information today so that you can start thinking about the data-driven decision-making that lies ahead and when you're able to engage in this work, sooner or later, start to be using evidence to drive those decisions.

One way that others in the education field have been trying to ease the burden on decision-makers is by offering their tools for free. There are many lists out there that are aggregating those tools, but I think that sifting through all of that information can be pretty daunting. Even before COVID-19, understanding which ed tech tools were effective and which you could use was really a challenge. The existing evidence is fairly limited, and it hasn't kept pace with the fast innovation in the ed tech field. We know that schools spend

billions on ed tech each year and has needed more and more information about which tools are worth the investment.

What's made this research challenging is that there is a lot of variation in which ed tech is being used from district to district and all the way down to even teacher to teacher. The list of available ed tech within a given district can actually be pretty long, with students having licenses to many different tools and some of those licenses going unused or tools being used in very different ways. So, we're facing all of those same challenges around the ed tech research right now but in an even more distributed landscape with higher stakes. I think the question is how do we make sense of all of this?

Well, we might have some questions about which ed tech schools and which strategies we're using are most effective. We might try to answer that question by looking to the existing evidence base. As I mentioned earlier, the evidence for any one tool might be non-existent. For example, if you're interested in understanding the effect of Flipgrid or Tableau, there may not be much out there for you. Instead, we may be able to learn something from broadening the scope of the evidence we look for, instead searching for evidence that the theory behind the tool is sound – like whether online peer-to-peer engagement is effective for improving academic success.

Or we may look for the effective of online education overall. On that front, the evidence can be a little bit disheartening. Susan Dynarski wrote in the New York Times in 2018, "Research in this area has shown us that there is an online penalty for struggling and vulnerable learners." Research from others in the field has generally shown us that when comparing online and virtual schools to traditional schools, many students earn lower grades or fail more often; and virtual schools just don't perform as well as their traditional counterparts.

Two of my colleagues led a REL webinar last week reviewing the research for online learning, and the takeaways were much the same, highlighting that virtual learning is likely to be least effective for our most vulnerable students. As they noted, there are some reasons for optimism. We can think about the fact that most studies of online learning have really focused on that comparison of students participating in an online setting to students in a traditional setting. We don't have that option here, as Brian was saying. We're not even necessarily interested in online learning outperforming more traditional teaching methods.

So a more realistic expectation is for us to identify mechanisms for online learning that can help us mitigate learning losses as much as possible. In looking across the research, I think there are a few specific strategies that may be bright spots in this regard. For example, being intentional about still providing some synchronous opportunities; ensuring that students are getting feedback, tutoring, and support as needed; focusing on project-based learning and gaming; and providing resources and materials to supplement learning.

This evidence alone isn't enough to answer all of the questions that schools and districts are grappling with right now, questions like:

Which remote learning strategies are most effective for engaging students or promoting academic achievement?

Which strategies are most effective for specific students, like those with disabilities or who are English learners or even students of different ages?

Which strategies help support and engage parents?

This certainly isn't an exhaustive list, but it's an example of all of the really important questions that schools are considering today.

To answer them, we're going to need to begin generating new evidence, like use of strong research methods. I think what's particularly important is answering these questions in your school or your district. What's most effective in one part of the country may not be equally effective in another, so it's really

important that we're both sharing best practices with each other but also confirming that those strategies work when they're transplanted into a new environment.

These questions are going to inform what we do today, like how we're refining our remote learning strategies to provide the best support possible over the next couple of months and that we don't leave any students behind. They're also going to be really important for tomorrow. They're going to help us understand which strategies could be leveraged to try and make up for lost learning time over the summer or help accelerate learning to catch students up next year. They're going to help us prepare for the next time that there could be school closures, whether that's due to a resurgence of COVID-19 or another virus or natural disaster. They're going to help us identify whether there are any strategies that leverage technology that could be worth using at all times. So we'll spend the rest of this webinar today discussing approaches to answering these questions using strong research methods.

Now, traditionally we would use data that's commonly collected by schools to answer questions like this; but the kinds of data that are available that we're used to collecting have changed with this transition to remote learning. We can no longer measure attendance as being physically present for the day. Many districts are still determining how they'll grade students, whether they'll offer pass/fail designations or just use their grades from pre-COVID-19; and states have canceled their assessments for 2020.

In addition, we no longer have immediate inputs of student engagement, such as seeing if students raise their hand or actively participate in a discussion. We need to think of new ways to collect feedback from parents, students, teachers. Technology and the technology we're using during this time really provides a lot of new datapoints and mechanisms for collecting data.

Instead of traditional approaches to measuring attendance, we can look at account logins for specific apps, session duration or time in app, even attendance during synchronous sessions that you might be having through Zoom or Google Meet. You can take attendance in these kinds of sessions by roll call or using a quick poll or even just looking through the participant list.

We can still monitor academic progress without grades or seat assessments, instead looking to technology-based competency assessments or in-app formative assessments. We can also look at the completion of assignments or projects or the completion of specific modules within an ed tech tool. Engagement can also be measured through students participating in synchronous sessions, and that might be measured through completing polls that happen during class or engaging in the discussion. We can also think of some other ways, such as how often they post to a class discussion board or respond to posts from their peers.

Finally, if schools and districts are regularly reaching out to students and parents and teachers with surveys about device accessibility and connectivity, some of those tools can also be used to ask for feedback that can inform improvement. Tools like checklists or plans that teachers and schools and LEAs may be required to submit can be used to submit detailed information on the technologies and strategies that are being used by those teachers and schools.

I just wanted to note quickly here as well that you should talk to the appropriate staff in your district to confirm what data can be collected and whether there are any restrictions on how it can be used, such as using it for an evaluation or transferring it to a partner who can help support that data analysis if you're not able to do it in-house.

There are a number of different ways that we can then analyze this data, and the methods we might use fall along a continuum that give us varying levels of confidence in whether one strategy is preferable to another or whether a given strategy is useful. For example, we may look at something like usage data to describe the percentage or number of students that are logging on to a specific tool at least once per day. We may look at whether attendance during synchronous sessions increased after hotspots or laptops were distributed. We may even look at whether there's an association between session duration within an app and scores on an in-app assessment or quiz.

Many of these datapoints are made available by technology vendors. They can often be accessed through embedded dashboards within tools or even downloaded as Excel or CSV files. If these dashboards are

currently available but only at the teacher level, you can sometimes reach out to vendors to discuss batch rostering strategies that may allow you to see all the students at the school or district level. If the data isn't made available to you through the platform, you can also reach out to vendors to request this data and set up a secure transfer protocol for regularly receiving that data them.

All of these approaches to analyzing data can be really useful in different ways and are certainly an improvement over not using data in any systematic way.

What I want to talk about today are matched comparison approaches to analyzing data. The reason why I want to focus on this approach is because it can help you directly compare two remote learning strategies for the purpose of refining your approaching while capitalizing on organic variation that may be happening across your state or district or even within your school. So while an experimental approach or RCT would provide you with the most confidence that one strategy is more effective than another, we realize that it could be exceptionally challenging and not feasible at all right now to randomly assign students to receive different strategies.

So this matched comparison approach is a really good alternative that still allows you to compare outcomes for students who appear to be similar and then be reasonably confident that one strategy is more effective than another. I want to make this a little bit more concrete.

You can take the approach of testing applications against each other for any outcome that you're tracking, such as engagement or performance, anything that you think is going to be changed as a result of using one ed tech tool compared to another. As the education community has been discussing for years now, technology on its own isn't going to improve student outcomes. How that technology is used, the pedagogy around it, is what's really critical here. So even more so than comparing any individual technology, it's going to be important for us to be comparing the strategies for using that technology. Identifying effective strategies will be the most useful for sharing best practices and determining how to make the most of ed tech in the future.

So let's talk a bit more about comparing strategies for using technology. I've included some examples here, but this is certainly not an exhaustive list. Just as an example, we might be thinking about the relative effects of assigning different amounts of content. For example, does assigning four hours of content increase performance relative to assigning two hours of content?

Alternatively, we might want to look at the effectiveness of different check-in frequencies on student engagement. Is an every-student-every-day policy like what Phoenix is doing the most effective, or what are the relative effects of providing synchronous compared to asynchronous content or the effects of policies around grading? There are so many different comparisons that we could be making that reflect all of the different strategies that are being used, and we can make these comparisons to help determine which approach is actually working best for your students and your families.

Making these kinds of comparisons goes beyond what's feasible generally within an in-app dashboard, but it's still relatively easy to do this work and to do it with data that's readily available. A free tool that can help you do this is the Evidence to Insights or e2i Coach. The initial support to build this tool was provided by the U.S. Department of Education's Office of Educational Technology. Then for the last year, Mathematica has been continuing to improve this tool with support from the Chan Zuckerberg Initiative.

A practitioner-driven research process, which is what the e2i Coach facilitates, really allows you to piece together a clear understanding of what works for whom in your context so that you can be confident in the decisions that you're making. This is critical when we are making so many decisions about how to adapt to new ways of teaching and learning. This tool is a completely free online platform that's available to schools, districts, states, ed tech vendors, and any other service providers who are interested in generating evidence of what's working and particularly useful for those who are currently interested in using evidence to refine remote learning strategies.

What I think is really valuable about the e2i Coach is that it makes traditional research methods, like comparison group designs, accessible to a broader audience of decision-makers. The e2i Coach does this

by enabling a five-step process that is super easy to follow and quick to complete. You can think of it like Turbo Tax but for program evaluation. It gives you the control to make the research really customized and relevant, but it's automating the challenging part so that you can get the answers you need without having a researcher on staff if that's not something that is accessible to you in your district.

You'll start out by providing basic information about the tool or strategy that you want to evaluate, the outcome that you expect to change, and how you'll create two groups to compare. Then in Step 2, the e2i Coach will help you craft your research question, define what *you* would consider a success in your context, and determine how you would act on those results. Then the e2i Coach will walk you through the process of preparing and uploading your data so that you can actually create those similar groups and will return a data file to you that's restricted to students who are in the treatment and comparison group.

Once you have your outcome available, the e2i Coach will then provide you instructions for uploading that information and will conduct the analysis for you. Finally, you'll get a findings brief that summarizes all of your results and your evaluation design and then any information that you choose to add about your context and your implementation. These findings briefs are documents that can be downloaded as a PDF so that you can share them with the key stakeholders in your district.

(inaudible) described the e2i Coach really helps practitioners and other stakeholders answer the questions that they're most interested in and define their own metrics for success. It also helps you participate in a community of practitioners who are invested in building a bottom-up research base.

I wanted to note briefly that data that's uploaded into the e2i Coach should not contain personally identifiable information about students or teachers and then for security purposes, none of the data files that are uploaded to the e2i Coach are stored. If you're interested in learning more about the data privacy and security piece of this, there's a full statement available on the website.

The Evidence to Insights Coach, what's going on here is that it's facilitating this process by which you create those two similar or matched groups for comparison. For example, you might be thinking about students who are receiving synchronous content compared to students who are receiving asynchronous content. What's really important is that these groups are as similar as possible on characteristics such as previous achievement or engagement, free or reduced-price lunch eligibility, and in our current situation even things like Internet or device access. The e2i Coach will help you create those two similar groups based on the background characteristics that you have available in your data.

Then the second step is to compare outcomes, which the e2i Coach will also help you do; and then, because you're comparing similar groups of students, you can be really confident that the results are due to something like synchronicity and not to other factors, like whether students have a laptop in their home.

As we were talking about before, the e2i Coach in this sense can help you answer a lot of the questions that schools are considering now, like questions around letter grading policies and whether those help with student engagement or whether the amount of content or how it's provided actually make a difference in achievement or engagement.

Your results from the e2i Coach are summarized for you using a probabilistic statement and chart, as you see here. For example, you might find that there is a 78% probability that synchronous content increased assessment scores by at least ten points compared to asynchronous content. This may be different from the way you've typically seen research results presented, which usually focuses on whether the results are statistically significant or not.

We have chosen to take a different approach to really focus in on the question that's most relevant to decision-makers, which is did a program or strategy work and to generate those insights using both new and existing knowledge that we have about educational interventions. Our approach here draws on how much change would be meaningful or what you might expect. This is how much change you, as the user, would need to see in order to be convinced that something "worked." This would be based on existing literature or goals that you set for your school or district.

You'll also need to determine how certain you want to be that a change occurred. I think the easiest way to think about that is by thinking about checking the weather. When you get the weather report each day, there's some chance of rain. It could be low or high, and you have to decide what chance of rain would make you want to take an umbrella when you leave the house. The same is true here. You need to think about how high of a probability you would need to see to say scale up the use of the strategy. The probability that you set could be higher or lower for your decision-making context.

The e2i Coach will then be able to tell you whether the probability that your strategy achieved your outcome goals and exceeded that minimum level of certainty that you set. If so, you can conclude that the program was successful. It also tells you the probability of other scenarios that could be occurring. So if the program wasn't successful, you can make different decisions based on whether it seems like the program was actually harmful to students or whether it was equivalent or the same as the alternative.

The results that I just showed were for a single group of students, but you can also think about how to break your results down by different groups of students to determine whether some technologies or tools are more or less effective for different groups of students. This allows you to keep equity at the forefront of your work and make decisions that are based on what works for everyone or enable you to find solutions that are going to be particularly effective for supporting our most vulnerable students.

In these results, each row represents a different student group. By analyzing results in this way, you could, for example, look at whether the effects of a strategy vary based on the types of technology students have access to at home or based on something like average household income for a district. This will help you determine which strategies are most and least effective for different students.

I'm having a slight technical difficulty.

[Pause]

[Brian Gill]: Are you having trouble advancing the slides?

[Mikia Manley]: Yeah, I just kicked out of the online system; and I was trying to reload. Sorry about that.

[Brian Gill]: Okay, so I can move you forward to the data requirements on what you need to get started.

[Mikia Manley]: Okay, it just reloaded for me, all right.

[Brian Gill]: Great.

[Mikia Manley]: Okay, go back just a little bit.

All right, sorry about that, guys.

I wanted to highlight two other key features within the Coach. One is the ability to conduct your evaluations in teams, allowing you to collaborate with your technology team or your curriculum team and others. This can help you include multiple stakeholders in the design of your evaluation and the interpretation of results *and* allow you to do that virtually given that we can't all be working together in one place right now.

The second thing I wanted to highlight is the ability to view findings from other e2i Coach users. As you complete evaluations, you'll have the option of sharing your findings brief with the community. Then, any shared briefs are anonymous unless you choose to include information such as your district name that would identify who published the evaluation. Our hope here is that especially now, our users will choose to share their findings so that we can be learning from each other and that we can use this feature as a virtual mechanism for sharing best practices.

The last thing I'll reiterate is that it's okay if you aren't ready to analyze data right now. One of the best things about the e2i Coach is that you have the flexibility to run your analyses at different timepoints. You can use the Coach to set up your research prospectively now and continue to collect data for as long as you need before analyzing it. I will mention that the e2i Coach is a rapid-cycle evaluation tool, which means that

there's no set time frame that you need to adhere to; in fact, the purpose here is really to document outcomes and analyze results quickly. Especially with data collected virtually, you can run these analyses as soon as you think a strategy has been in place long enough to influence outcomes and you have that data available.

Like I said, there is flexibility here. You can also use the e2i Coach to look back at your data a week from now, a month from now, over the summer, whenever you're ready to set up a retrospective evaluation design.

Whether you're excited to start using the e2i Coach today to make your data-driven decisions or you want to make a plan for using it in the future, there are a few things that you'll need to have in place to get started. The biggest piece of this is documenting the tools and strategies that are being used. In order to use the e2i Coach and make the kinds of comparisons that we've been discussing, you will need to sort users into two groups. This means that you need to know who used a specific tool or strategies or which schools employed specific strategies.

As I mentioned before, the goal here is not to assign students or schools to these groups but rather to focus on the organic variation that's already happening. Look for instances where different teachers or schools are taking different approaches, and then use those cases to create your two groups.

In addition, you'll also need data on how students measured up on your outcome of interest before the remote learning tools or strategies were implemented. For example, if you are looking at assignment completion between COVID-19, you'll want to compare students who had similar rates of assignment completion before the pandemic. Given the changing nature of what data is available, you might have to get a little bit creative about how you identify these measures.

For example, the way that we measure attendance might be really different during COVID-19; but you could still use traditional measures of attendance from the first half of the school year to match up those similar students.

You'll also need data on other characteristics that are likely to influence outcomes, such as free and reduced-price lunch eligibility or access to the Internet or devices and other student demographics. If you're interested in analyzing your outcomes broken down by groups of students, you'll need some way to identify which groups students are in.

Finally, you'll need a measure of your outcome of interest. As we've been discussing, there are lots of different ways that you can be documenting these outcomes. There are many virtual measures of competencies, attendance, engagement, and more that could be used.

These are just examples of some of the kinds of datapoints that you'll need to be tracking in order to engage in this kind of data analysis, but also in many other types of data analysis that could be useful to you over the coming months. I just want to note here that these examples have largely focused on students, but you might also be collecting similar data or looking at outcomes for parents or teachers.

A few words of caution that I wanted to offer before you begin. If you're comparing two different technologies – sorry, I just got kicked out again.

[Pause]

[Brian Gill]: Do you have access to them offline?

[Mikia Manley]: Yeah, so if you want to go – we should still be on the "Word of Caution" slide.

[Brian Gill]: Yes, we are.

[Mikia Manley]: Okay.

A couple words of caution before you begin. If you're comparing these two different technologies, your outcomes will need to be consistent across both technologies. For example, it won't make sense to compare achievement on an in-app assessment offered in one technology compared to a different in-app assessment in a different technology. This is because the assessments could be measuring different levels of skill or different types of skills.

You could, however, look at the number of logins across the two apps as that measure is consistent regardless of the platform that you're in.

You also need to be careful to avoid one-to-one comparisons; for example, comparing strategies in School A to strategies in School B. This is because a one-to-one comparison won't allow us to rule out differences between the schools that could be influencing the outcome are at play. For example, if School A is using synchronous learning and School B is not, there could be differences at play like whether School A provided laptops to every student and School B wasn't able to do that. So, we want to be careful not to conflate device access with the strategy that we're evaluating.

While you should capitalize on the variation that's already happening in your school or district or states, try to group teachers, schools, or even districts into clusters to have as many in each group as possible.

Just to summarize some of our key takeaways from today – and, Brian, if you can move to the "Summary" slide.

[Webinar Producer]: There you go.

[Mikia Manley]: We're going to need new evidence on which remote learning strategies are working to supplement the existing evidence base. Technology is actually going to provide us with many opportunities to collect detailed (inaudible) on student progress and engagement. A matched comparison approach can give us the most confidence that one strategy is preferable to another and using a matched comparison approach is actually really easy with the e2i Coach. You don't have to do these analyses now, and that's especially true with the e2i Coach; but you should start thinking about the kinds of data that you would need to be collecting in order to do those analyses down the road.

Taking alternative approaches to documenting student outcomes and analyzing data is going to be incredibly important for supplementing our current evidence base and filling in gaps where no evidence exists, helping schools and districts and students make really important decisions. This is doubly important when we consider the disruption to any research that was ongoing before the pandemic. Up to 500 research grants that have been issued through EIS could be disrupted, meaning that there are going to be fewer opportunities to introduce new research into the field in the near future. The cancellation of many tests, such as the National Assessment of Educational Progress and almost all state exams, exit exams, and end-of-course exams are going to make it really hard to use existing benchmarks to understand what happened during this time.

As the director of IES said recently, we don't want to miss the opportunity to understand what worked, what didn't, and why as schools undergo these really radical transformations. It's important both for local decision making and for broader understanding of what we can do in the future, but we're being faced with this data hole; and we need to start taking proactive steps to fill that hole as we move forward.

There are a few specific things that you can start doing now. You can collect good data on what remote learning strategies are being used, including which ed tech products are used, as well as the pedagogy around those products. You can talk to your ed tech vendors to make sure that you'll be able to access data for your students and how you'll gain access. You can conduct an appraisal of the types of outcome data that are going to be available to you and develop methods of collecting any additional data that might be needed.

I'll stop there, and we can transition to the Q&A portion of the webinar; and then I'll take just a couple more minutes at the end to close us out.

[Brian Gill]: All right, thanks so much, Mikia. Nice job working through the technical difficulties and follow-up to our audience for those.

As Mikia mentioned earlier, you can submit your questions via the Q&A tab. Many of you have already done so, so I'm going to give Mikia some of the ones that have come in so far and meanwhile keep bringing them in.

The first thing I should mention though is that we had several questions about resources and references. Rather than trying to address all of those orally here, we're going to see if we can respond to those online. In fact, I think Brian Willis has just sent some responses to some of those questions about things like:

Can you tell us more about the research base?

Can you tell us where to find more info about the projected COVID learning loss?

Where do we find the surveys on the fraction of teens participating?

We'll see if we can make some links available in the webinar itself.

That said, let's start with one. We've got a question about subgroups, Mikia: "*Can the Evidence 2 Insights Coach produce results for a particular subgroup of students who might be especially relevant in a local setting, whether that's by ethnicity, poverty, special education status?*"

[Mikia Manley]: Good question. Thank you. e2i Coach can give you your results by subgroup. And you, as the user who's running your evaluation, will get to decide what subgroups you want to look at. The only requirement is that you have a variable in your dataset that you upload that will tell the Coach who's in which group. So, if you want to look at your results by race or ethnicity, you would just need to have available in your dataset that indicates student race and ethnicity, so that we can group those students together on the back end as we analyze the result.

[Brian Gill]: I thought that would be one you could answer pretty easily, great. We're happy to be able to give a favorable answer there.

Somebody else asks if the Coach could be helpful when comparing differences which might be associated with different platforms that districts might use...Google Classroom, Canvas, Blackboard, whatever they might be using there.

[Mikia Manley]: Yeah, so you can set up your computer platform within the e2i Coach so that – let's say, for example, your treatment group is using Zoom and your comparison group is using Google Meet. Then you can track your outcomes and do the comparison that way so that you're comparing different platforms that are being used across the district.

[Brian Gill]: Great. Now, here's an interesting one, actually two questions that are sort of related, I think.

One person asks if the tool is available – is it only available for data related to online learning. A related question asks about non-technology mechanisms. So, tell us about that.

[Mikia Manley]: That is a great question. The e2i Coach can be used for any type of intervention that you're looking at. It doesn't need to be online learning or virtual learning, and it doesn't even need to be an education intervention necessarily. You can use it to do comparisons that look at things that are happening outside of virtual learning. If you're thinking about different strategies that are happening in person or ways that you're trying to provide services outside of that digital space.

I'll just sort of reiterate here that you don't even need to work in a school or district to use the e2i Coach. It can be used by other education stakeholders or even other organizations who are also interested in using evidence at this time or at any time to make these kinds of comparisons across different strategies.

[Brian Gill]: Great. All right, here's one that might be harder: "*Can the Coach work with qualitative data?*"

[Mikia Manley]: That's a good question. The Coach works primarily with quantitative data. You do have to have data that's available numerically. So, your outcome data does need to be a numeric outcome. You can take some creative approaches. If you're collecting qualitative data, if you're trying to quantify that in some way and you could generate a numeric variable, that's something that you could potentially integrate into your analysis.

[Brian Gill]: Okay, and we have somebody interested in hearing about whether there's any training in the Coach or could it be provided given that school teams have varying degrees of skill in using this kind of thing.

[Mikia Manley]: Yeah, we would be thrilled to offer some training, and we would be happy to do that. For anyone who's interested in getting training on how to use the Coach or even a more in-depth demo than we were able to provide in this webinar, you can reach out directly to me after this webinar. We would be happy to set something up.

[Brian Gill]: Great, let's see—

[Mikia Manley]: I'll add one more thing to the last question, Brian.

[Brian Gill]: Yes, go ahead.

[Mikia Manley]: In this next month or so, we will also be adding asynchronous training content to the website. So there will be some videos and materials that you can download if you are trying to figure out how to prioritize things and (inaudible) easier for you. That will be available, and it's coming soon to the website.

[Brian Gill]: Great, another one is: *"Is there any reason to worry about the capacity of the Coach to handle a large number of users, given that one might imagine that this number will increase enormously now?"*

[Mikia Manley]: We don't have any concerns about that at this point. The e2i Coach, without getting too in the weeds, is built in a very scalable cloud architecture. So we don't have any current concerns about being able to scale to meet the needs of anyone – any districts or others who are interested in using it at this time.

[Brian Gill]: That is great to hear.

We have one here that I think, if I understand it correctly, is about sort of what advice would you give to empower schools and teachers to make necessary shifts based on evidence using this protocol? I think that might be about persuading people to try more than one thing and testing against each other, and it might be about how they respond to evidence produced by this. So, I think maybe either of those things you might address could be of interest.

[Mikia Manley]: I think that this can be challenging, especially when there's a lot going on. And there is, of course, resource constraints in schools and districts to change strategies that are already in place. So, I think one thing that's really helpful about the Coach is that it does give you this concrete evidence that you can use to start a discussion with the relevant stakeholders and say, "If we're seeing this in the data, how can we implement this in our decision-making?"

That's not always a black-and-white decision. I think it can be part of a back and forth conversation. I think what's nice about the Coach is that you can use it look at comparisons that are kind of on the margin, so thinking about things that would be relatively easy for you to change going into it as you design your evaluation. That might be you're using the same tool either way, but it's a question of does it make a difference if we provide four hours of content relative to two hours of content. So those changes are a little bit easier than, say, like do we switch from a technology platform that this school already has to a different platform that might be associated with some additional costs for licenses or things like that.

I think the other place where the discussions can be really helpful here is as I was mentioning, the analytics in the Coach are really built around values that you, as the user, set. So, you get to decide how much

change would be meaningful and how certain you want to be in those changes and then what you're going to do with that information.

I think that sometimes having that proactive conversation with people about the decision-making and how large of a change they would actually need to see to feel like it's worth pivoting and making a change can be helpful at those early stages. And then you can build your analysis around the magnitude of that change that you would need to see in order to actually inspire people to make a change in what they're doing. There are situations where that could be a pretty large change that you would need to see or a very high level of certainty, especially if you're balancing things like cost and scale as part of those decisions.

[Brian Gill]: That sounds like a great way to start those conversations.

Okay, we don't have time to get to all the questions, unfortunately; and I don't want to keep you all longer than the hour you've committed to this.

Mikia, why don't you go ahead and continue? Are your slides now active, or should I continue advancing them for you?

[Mikia Manley]: Yes, I have them back. Thanks, Brian. I'll just take a minute or so to close us out here.

Again, I really just wanted to thank you all for joining us today. We know that there's a lot going on, so we appreciate your time. I hope that you found this really useful if you're thinking about how you can start generating evidence around what's working for your students during these school closures.

If you're interested in more resources from the REL, you can visit the REL COVID Response Page, where resources from all of the RELs will be posted, and the Comp Center COVID-19 Compendium for more resources for schools. Links to these are in that resource section of your attendee portal, and then there are links here that will be available in the PDF of the slides.

Of course, you can visit the Evidence and Insights Coach at e2i.org and start doing your evaluations today. As I mentioned, the platform is entirely free and available for you to use. I will just make a quick note that the e2i Coach does *not* work in Internet Explorer. So, if you try to open it in Internet Explorer, you'll just see a white page. So make sure you're using Chrome or some other type of browser.

[Brian Gill]: On the next page has the resource that I think many of you are interested in, which is Mikia's contact information.

[Mikia Manley]: Yes, so if you have questions, you can reach out the Mid-Atlantic REL or to myself or Brian Gill. My e-mail is here. If you are downloading the PDF of the slides, it'll be in that PDF. Please feel free to reach out to me via e-mail.

Then just a quick note to one of the other comments that was made. There is a reference slide here, and there are links to the study about the COVID slide, as well as the Common Sense Media survey about kids who are logging on during this time.

Thank you again. I'll just give you one last reminder that you will get a feedback survey as you exit this webinar. We would really appreciate your input, so please take just a few minutes to fill that out and provide us with your feedback.

[Brian Gill]: Yes, it won't take long; and it will be very useful to us and to our sponsors at the U.S. Department of Education.

Thank you all again very much. Bye-bye.

[Mikia Manley]: Bye-bye.

