Transcript of Webinar

Becoming Good Consumers of Research

0:11

As we relaunch our monthly calls. We will be starting calls today. I'm very excited that we have Laurie Lee.

0:21

She's with FCRR. She's also with REL Southeast, and will be representing REL Southeast as she presents today, Becoming Good Consumers of Research. I know that this is an issue that has come up several times, in talking to our districts about the new requirements for K 12 Reading Plan, and the requirement that they be evidence based. And, we're hoping that this particular call will give us more information about what it is to be evidence based and how we can be good consumers of that research. I do want to also say that we have some things coming up. Our next call next month, will be about oral language. That's also a question that came up several times within our K 12 plans.

1:11

Next week, is survey 2, and so, make sure that as you're filling out that information, if you have any questions at all when you're doing the data element, or the coding piece of that, that you reach out to Kim Ward and we will have her information provided.

1:31

We're going to have Laurie Lee present now, and then we're going to have questions afterwards. So, I hope you all enjoy. Feel free, as you have questions, to type them in the question box and we'll be answering them as we go.

1:46

Laurie Lee, thank you so much for joining us this morning.

1:49

It's a pleasure. Thank you for having me. So I would like to just thank the Just Read, Florida! team for inviting me to share with you this morning and it's a true pleasure and I'd like to thank all of you for taking time out of your day to participate in this morning's webinar.

2:10

This is a very strange year and we know that you've had very difficult decisions to make. And that getting back into school has been a challenge and many of you are doing that in various kinds of modes. So thank you for all the work that you're doing, and the dedication that you have to the families, the teachers, the students, in your district. So thank you, for that. Thank you, for the opportunity, again, to share. Actually, I'm going to come to you this morning with my FCRR hat on. And so, in a minute, I'm going to share my screen and we'll get started.

2:49

I would like to just preface my presentation, and I'll just go ahead share the appropriate screen here with you.

3:02

OK, there we go, hopefully you're seeing that first slide, that introductory slide, which is basically, “Can We Say This is Evidence-Based”. And I want to let you know that I'm coming to you as a practitioner. I was a teacher for a number of years, worked with the folks at Just Read, Florida for a number of years, before I came to FSU. My background is teaching and learning. And so, I am not a true researcher, so to speak, but I do consume research, and that's a very important part of the work that I engage in. And it's an important part of the work that you engage in, as well. And so, in order to be good consumers of research, we need to have a basic knowledge base of how to do that, which means that again, we are not researchers. We're not going to become researchers.

3:59

But we do need to know what we need to look for and what we need to do to become good consumers. So our goals this morning, first of all, we want to discuss the importance of using evidence-based programs and strategies and practices. And, you know, that already so we won't spend a great deal of time on that particular piece. Secondly, we're going to briefly go over the levels of evidence established by ESSA. Again, I know that you're familiar with those, so we won't spend a good deal of time on that either, but you know, just as a refresher. Then we want to talk about the criteria for each of those levels, and we'll get into that criteria a little bit more deeply.

4:48

So this is where we'll spend a good deal of our time, and then really want to take just a little while and apply what we've had the opportunity to review this morning by looking through some articles and really looking through that research, consumer lens, and thus, the handouts that you have available to you. So you have, actually, I think, a PDF of this presentation, so it's available for you. You have a rubric that we're going to look at here in a little bit, to utilize as we determine levels of evidence> You have the articles that are available to you, those who have been annotated, and we're going to work through them briefly together. And then you will receive one additional article with a follow up e-mail and that will be just kind of your practice article. And so, hopefully, you'll have a moment where you can peruse that practice article and use the Rubric and use some of the information that we've shared this morning.

5:54

OK, so, why does it even matter that we're concerned about this?

6:01

Certainly, we need to know what works, right? We don't have the time to try to figure all of that out on our own, especially when work has been done, to let us know what does work, when it comes to literacy, reading interventions, et cetera. We need to use our time wisely. So, we need to be good stewards of our time, so it's important that we have a knowledge base that will permit us to look at that research and make those decisions based on what we can garner from it. We need to use our resources wisely.

6:40

And so, as we make choices, we need to make wise choices. When it comes to materials investments, and time, investments, and professional development. And so, we need to make sure that all of those things are addressed.

6:56

And so, when we think about those things, the best way to ensure that those things are happening is to look at the research that's already available to us, OK. So here are those alpha levels of evidence that you undoubtedly are somewhat familiar with.

7:15

So, in order for an intervention, to have a strong evidence base, we know that there needs to be, it needs to have a supporting study. So, a study that has positive results.

7:26

That is well designed and that is experimental in nature.

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And again, we're going to talk about these things more deeply here in just a minute.

7:36

A moderate level of an evidence would mean that if that intervention is supported by at least one, again, well designed study, that is quasi experimental in nature. And we'll talk about that in a minute.

7:52

Promising evidence requires that again, there is at least one well designed and implemented correlational study that includes controls for bias.

8:04

And then, finally, something that would demonstrate a rationale. That simply means that there is some kind of logic behind that practice, some kind of evidence, some kind of research that would reflect the fact that it may very well work with our population. And then you need to be able to collect evidence as you implement that practice moving forward, so we can begin to build that research base regarding that practice.

8:37

So, we begin with this. As we are good consumers of research. What we want to make sure, first of all, is that we're gathering that research from reputable places, right. And so I have a list of some sites there that might be helpful to you as you search for research that is reputable in nature and that you can trust.

9:04

This just reminds me kind of like when I take my car to the mechanic. I want to make sure that that mechanic as reputable, that what they say, I can believe. That the repairs that may need to be made actually do need to be made.

9:23

And that when those repairs are made, that they're going to fix the problem. And so I need to make sure that I can trust my mechanic.

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And so likewise, with research, we need to make sure we can trust the research and that begins by gathering it from reputable sites.

9:45

I take my car in and perhaps the air conditioner isn't working as well as I wish it would, which is a huge problem in Florida, right? So my mechanic says, well, it just needs some, Freon, OK.

10:01

One thing we need to think about, as we go through this presentation, so it's kind of similar.

10:07

So basically, if he says, my car needs are Freon, I'm going to say, OK, great, you know, please do that.

10:14

I'm not going to say, well, tell me how the Freon is going to affect the cooling components of my car to ensure that I am going to have cooler air than when I brought it into you. I'm going to trust my mechanic. And in essence, it's the same here.

10:36

I don't know enough about some of the intricacies of research to ask questions in regards to, how all this stuff works and what about that formula. And you may ask those questions, I'm going to tell you, I really don't know. What I do know is that I could look for specific things and the research that are acquired from these reputable kinds of sites. And I can become a good consumer.

11:06

OK, so just like I'm not going to be a mechanic, I'm not going to be an in-depth researcher.

11:13

OK, so let's start then by looking at that summary of strong evidence. So when we look at the What Works Clearinghouse standards. If you see a study there, that it says on the What Works Clearinghouse website that it met their standards without reservations, then you can be sure that the evidence is strong for that, so it meets that ESSA requirement. So here are the things, though, that, the criteria of that, what you would want to look for, if you're reviewing a research article that you've gathered from one of those reputable sites. So you want to look for, is this a randomized controlled trial?

11:58

And what that means, is that you're going to see a treatment group, and you're going to see a control group, and, you're going to see, in that article, the fact that the participants in that particular study, were assigned to those groups randomly. OK, so, it should say that. There should be an indication there, that there was a random assignment of participants, OK? And then, you should look for attrition.

12:29

And what you're looking for in particular is low attrition, and we're going to talk about what that means here in a minute.

12:36

And then, finally, what you'll want to see is that there were no confounding factors, and again, we'll talk about what that means here in a minute. But in order to have strong evidence, you'll want to see a randomized controlled trial. So, random assignment to groups. You'll want to see low attrition and you'll want to see no confounding factors.

12:59

So what is attrition?

13:00

What does that mean, OK? What that basically is, is a loss of your participants, a loss of the subjects from your experiment and there are a variety of reasons that that can happen. And you see several of them listed on your screen there. Maybe the student transferred, they just left the school. Maybe they were absent on the day that that outcome assessment was given so you don't have data for them. They dropped out of the study, they're not participating any longer, or they refused to participate after they were assigned. Maybe you didn't get consent from their parents for them to participate even though they were signed in the beginning? And so, for whatever reason it is, they left, and so you don't have their information in the end.

13:51

And so we have two forms of attrition that we can look at.

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Overall attrition, which means you're looking at who left overall from both groups. From your control group, which is the group that did not receive the intervention. And from your intervention group, meaning that group of students that did receive that intervention. So overall, what does that look like? What percentage of students that began are not there any longer at the end.

14:21

Then differential attrition. So this is the difference between the percentages of students that left the control group versus the percentage of students that left the intervention group. So that very well could be different. And the way that that's calculated is there on your screen.

14:44

The level of attrition for the intervention group, then you subtract the level of attrition from the comparison group.

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So, just for an example, let's say, 30% of students, which would be high, 30% of students, left the intervention group, and 10% of students left the comparison group.

15:11

So your differential attrition is 20%.

15:16

You just subtracted.

15:18

So you're looking at those different kinds of attrition and knowing that, means that percentage of students that began with you, did not finish, they left.

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So why is this important? Random assignment? One of the reasons, the main reason, that it's considered pretty much the gold standard, is because when you randomly assign participants, then you can be quite sure that the groups are comparable, that they're equivalent at the beginning.

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And so, when attrition occurs, when students start leaving your groups, then that means that you can end up with groups that are no longer the same.

16:12

And when that happens, it can affect the effect of your intervention.

16:19

So, what that means is, that you can't be sure, any longer that it was the intervention that caused whatever results that you acquired in the end. It could be the fact that your groups are no longer the same. So let's say, just for an example. So you have a group of students that scored at level one and level two on the FSA.

16:44

And so, you're going to do a randomized control trial with an intervention.

16:49

So, you randomly assign students that scored at level 1 and level 2 to 2 different groups. In each group, you have some students that scored at level one, and some students that scored at level two. And so then, let's say, for the sake of conversation, that you have some students that, you have some attrition, and you have what ends up to be, now, your comparison group. Not too many kids left, and pretty much the same number of Level one students left as level two, and so your group basically is very similar to what you began with.

17:29

But your intervention group, let's say that a lot of your students that scored at Level two left, and so, you now have a group that is primarily consisting of students that just scored at Level one.

17:50

So, when your intervention then is delivered and you look at the results at the end, you can't be sure that that intervention performed as it did, because your groups aren't the same any longer. So, maybe your students in your intervention group didn't make as much progress as those in the comparison group.

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But remember, you don't have students that scored a level two in there anymore, or at least not very many. So was it the intervention that was not successful, or was it the fact that your group changed? And that, that's the issue.

18:35

And so, when we look at attrition, that's the problem with it. We need to make sure that our groups are similar. And when we have attrition, then we can't be sure about that any longer.

18:51

The What Works Clearinghouse establishes a high attrition rate as point zero five standard deviations. That means that a low attrition rate would be below that point zero five. Again, formulas, all that, how that's calculated, blah, blah, blah, what you're looking for is point zero five. Was the attrition rate low?

19:15

So when you come across a reference to attrition in an article, look for that point zero five, look for the author to say there was a low attrition rate. That’s what you're looking for, OK, low attrition is good.

19:32

So then, again, we're looking at randomized controlled trials. So those that we know are strong levels of evidence, if those studies are well designed and if, you know, all of those components are there as we look at them. We need to look at attrition. We need to look at the potential of a confounding factor. So a confounding factor, this is a big one. So this is a component of a study that makes it difficult or impossible to tell whether it was the intervention that made the difference or not in the results. We just don't know.

20:17

And so, this truly can be a deal breaker. So, if there is a confounding factor, that's a huge red flag. Because, again, we can't be sure that it was the intervention that made the difference.

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It may very well have been something else. So there's two confounding factors that are fairly common. The first one is N equals one and you'll see that in an article. It may say N equals one.

20:48

And what that means is, that in your comparison group versus your intervention group, there's only one of something.

20:59

And so, there's only one of something in one of those groups.

21:04

So the example here that I've shared on the screen is that, perhaps in your intervention group, there's only one teacher, and in the comparison group, there are several teachers.

21:17

So then, with your intervention, you can't be sure whether it's the intervention that the teacher is delivering that makes the difference or if it's the teacher herself or himself. Is there something else the teacher's doing? And so, because of that, because you only have one teacher in that group, and you have several in the comparison group, you cannot be sure that it's the intervention that made the difference.

21:45

Therefore, it's a confounding factor.

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Then, the second confounding factor can be that there are characteristics that are not represented in both groups.

22:01

And here on your screen, I share one of them, which could be the fact that, let's just say, in your comparison group, that there are teachers that don't have PHDs. In your intervention group there are, and there's no crossover there. One group has teachers with that degree, and the other group does not. Again, because of the fact that that is not represented in both groups, means that we don't know if it's the intervention that made the difference, or if it's the fact that it was delivered in the intervention group, by teachers that had PHDs.

22:45

Now, if there were some teachers in the comparison group that also had PHDs, then we're good. Because again, we've got some crossover there so therefore it's not confounding. This is something you want to look for when you're when you're reviewing a study. You see it's a randomized controlled trial. So, you look for random assignment of participants. You look for attrition and you look for low attrition in particular. And then you look for an absence of confounding factors.

23:19

Now, I'll pause here, just a second just to comment. I know that this probably isn't the most fun you have in your life. This stuff is deep stuff, and for some of you, anyway, and for others of you, you're well versed in this. And so hopefully, I'm hitting a happy medium. This is kind of like our review of your stats class back in the day. And so just that refresher to remind you of these things. And, again, with the goal being that we want to be good Consumers of research, we're not going to be researchers, ourselves. And so thank you, Jessica for that affirmation. She just shared that this information seems to be helpful. So I'm glad, that is certainly my hope. But my hope is not that you become overwhelmed.

24:10

And my hope is also that you don't take this as condescending in any way.

24:17

It's certainly not meant to be that, either. Hopefully, this is the happy medium of providing what you need. So that was strong evidence.

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So now we're looking at the level of moderate evidence. Quasi experimental studies. So in these studies, there is not random assignment. You will still have two groups. You'll have an intervention group, you'll have a comparison group. Those will be there.

24:53

However, students will not be randomly assigned. They are assigned intentionally to one group or the other.

25:04

And you need to look for the establishment of baseline equivalence.

25:11

All right. So you might ask, well, why would we do that? Why don't we just not randomly assign students? Why can't we just do that? Because that solves a lot of the problem with the groups and that whole thing.

25:24

Well, especially in education, we at times for ethical kinds of reasons, will purposely assign students to a group. Because we can't morally or ethically, just randomly assign them.

25:44

And so if we have an intervention, and we know that the particular intervention addresses vocabulary, and we know we have kids that really could use additional help in vocabulary. We might intentionally assign them to that group. And assign others that don't have as great of a need to the comparison group.

26:09

Again, we're doing that intentionally because we have identified students that really need that extra help. And so we feel like morally and ethically we are obligated to provide the best instruction we can.

26:24

We think this will help, and so, we do not randomly assign. Because we're not randomly assigning and also in the case where if you have some attrition in a randomized controlled trial, this can be addressed statistically.

26:49

And so, our researchers can, if the difference isn't too great, make statistical adjustments to ensure that those groups are as similar as possible.

27:05

This is the definition here of baseline equivalence. It simply means that the intervention and comparison groups had key characteristics that were similar or equivalent before the start of the intervention. Right?

27:22

OK, and so that's the definition, that's what we're going for. We want similarity in groups.

27:31

Because we know, just like we talked just a minute ago, about how attrition can affect your groups. And again, that this is the whole thing that you end up with groups that are different. When that happens then it impacts the outcome of your study. And so we're looking at an intervention result that may not be correct if our groups are different.

27:55

So statistically, we can make some adjustments and again, this is applied to quasi experimental studies so there was not randomized assignment, we assigned students on purpose. We put them there intentionally. It also applies to those randomized controlled trials where you had a high level of attrition. So now our groups are not likely to be the same.

28:23

We're looking at using the analytic sample which is the group that's still with you at the end. In baseline equivalence, that's the important component there, is that our groups are the same at the end.

28:44

And so we can have several levels of baseline difference.

28:53

We can have a small amount of baseline difference, meaning our groups were essentially the same. That's what we're looking for.

29:01

We can have a moderate level of difference, and that would mean we can apply a statistical kind of adjustment to fix that. To ensure that groups are similar in nature.

29:19

Or, we might have a baseline difference so large, that we can't fix it. That even if we apply a statistical kind of adjustment, that it's not going to get us to the point where we can say that we have baseline equivalence, and that's a problem.

29:43

All right. And so here are the numbers. And this is, again, what we need to look for, not that we're going to ever employ in it the formulas or the statistical adjustments, et cetera.

29:58

But if you have a small baseline difference, this is how it is quantified. So zero means they are exactly the same.

30:07

And then on the other end, point zero five.

30:09

So, basically, if your baseline effect size is equal to or less than point zero five, then your groups are basically the same. So, no problem there. That's what you're looking for.

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And then, a medium level of baseline difference is then determined if you fall at point zero five, and then you're greater than point zero five, but you fall below point two five.

30:42

In this instance, a statistical adjustment can be applied. And so you might look for it might mention Hedges G, it might mention Cox’s Index, OK? Again, the expectation is not that, you know exactly what that entails, but if you see the baseline difference that falls into that range, then you should see some reference to a statistical kind of adjustment that has been made in this study.

31:13

Go back to my Freon, OK. I don't know how Freon works. All I know is when they put some in, it makes the air coming out of the vents cooler. Alright. And so, same here. I don't know. I saw Larry Hedges once across the room. I don't know how his statistical adjustment works. I just know that when he applies it, then I can get to the point where I can say my groups have baseline equivalence and I can have confidence in the results of that study.

31:45

And then a large baseline difference.

31:48

This then falls into that range where basically, your baseline effect size is greater than point two five. If that's the case Hedges can't help you.

32:01

And so that's too large, and you can't be confident in that study.

32:11

All right.

32:12

So that's basically the moderate level of evidence. Quasi experimental studies, meaning that your participants are not assigned randomly. They are assigned to groups intentionally. You do have groups. You do have an intervention group. You do have a comparison group. And then that baseline equivalence is what you need to look for. Once you see you have a quasi-experimental study that's important.

32:38

All right.

32:39

Then our promising evidence.

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This involves correlational studies. You're not going to see groups necessarily, you may see just one group. You’re going to see terms that will give you insight into the fact that there is some kind of relationship there. And that's what you're looking for, in a correlational study, though, there'll be an indication of relationship.

33:06

So first of all, if you do not see groups, if you do not see a comparison in an intervention group, then there's no way that that study is a randomized controlled trial or quasi experimental study.

33:20

It will not fall into either one of those categories, so it will not qualify to be strong or moderate in its evidence level according to ESSA. You see no groups, it's not one of those. So that's the first thing you look, and there's one group, you're going to see perhaps references to some kind of relationship, association, prediction, something like that, and we'll probably use some kind of statistical controls within that study.

33:54

And you're going to look for variables.

33:58

There'll be an independent variable, and there will be a dependent variable. The independent variable is what is changed or manipulated.

34:11

Then, that affects your dependent variable. The dependent variable only changes, because of what happened with the independent variable that was manipulated.

34:27

So let me give you an example. So this example is a school that perhaps they implemented a program, an incentive program for our students to read more books. And so they did this throughout the year. Students got prizes, woohoo, they celebrated, et cetera. So then the researcher might look at the end of the year.

34:53

And they might see the fact that, oh my goodness, the students that read more books scored higher on the FSA and the English language arts section, well, what do you know?

35:05

So what they observed was a positive correlation.

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More books are read.

35:12

They scored higher on the FSA.

35:15

That said, we cannot say that because of that program, because those students read more books, that was the reason that they scored better on that FSA, we know it's that program.

35:29

We cannot say that. We don't know what else happened during the course of the school year. What other programs were implemented. Maybe there was a family involvement kind of thing going on at the same time. And families were reading more books to their kids. Or, you know, whatever it might be. There might be a new core reading program. There might be a lot of different things that contributed to those students performing better on the FSA.

35:55

We're not saying conversely that this wasn't the cause, maybe it was. But we cannot say definitively that reading more books contributed or caused those students to score higher on the FSA. We can't say that.

36:16

So positive correlation, as one variable moves up, the other variable moves up as well.

36:24

Also, and this is where we can get confused. It's still a positive correlation if both variables move down. OK, and so let me give you just a random kind of correlation which also serves to tell you that although correlations are interesting they may not be all that helpful. OK?

36:48

So let's just say we saw a correlation between people who drank more iced tea and the amount of television they watched.

37:03

So the more iced tea people drank, the more TV they watched. How about that?

37:09

And so there was a correlation there and it's a positive one. I drink more iced tea, I watched more television. However, a positive correlation also could be this.

37:21

The less iced tea I drank, the less TV I watched.

37:26

That's still a positive correlation because both of those variables are going in the same direction.

37:32

Right? Now we know, or I would think we know, that ice tea and watching television probably don't have much to do with one another. I don't think that I can say, because I drank more iced tea, I watch more television. But that correlation, maybe there, who knows? But it is positive, regardless if we talk about it, in both of the variables moving up or both of them moving down.

38:01

Where we have a negative correlation is where we talk about one variable moving up, and the other one going in a different direction. OK, so if your independent variable, let's say I increase the amount of ice tea that I'm drinking.

38:20

And then, the number of minutes that I watch television decreases.

38:28

If that's the case, then I have a negative correlation.

38:32

I increased the amount of iced tea that I drank, but that didn't cause my TV watching to go up. Actually, it had the reverse effect. The minutes I watched television actually went down.

38:45

So that's a negative correlation. Where you may manipulate the independent variable, and it has the opposite effect on the dependent variable. There is a scale.

38:57

So when you see a correlational study, there's actually a scale where you can look to see the strength of that correlation. And that scale is a negative one to a positive one, with a zero meaning that there's no correlation.

39:12

Just means that there wasn't any kind of relationship there at all. Alright, and so a negative one would be a very strong negative correlation.

39:25

That, it was a strong correlation that showed me that as I drank more ice tea, then my level of television watching went down significantly. And then a one would be a very strong, positive correlation, as one went up, the other went up.

39:42

OK, so we have our three levels of evidence there. Randomized controlled trial.

39:48

Randomized placement of students. You look for attrition.

39:54

You look for confounding factor. You look for those groups.

39:58

OK, quasi experimental. You look for those groups. Students are not randomly assigned. That's clear within the study. And you look for baseline equivalence. You also look for baseline equivalence if you had a high level of attrition with your randomized control trial.

40:16

Then, for your promising evidence, that's your correlational study. No groups. You're just looking at variables, an independent variable, that is manipulated, and a dependent variable that responds to that manipulation.

40:31

All right.

40:34

OK, and then our last level of evidence just demonstrates a rationale. And here, basically, there may be some research that's been done on a particular program or practice, but the recognition here is that there's no studies that meet any of the criteria that we just talked about. That said, maybe it's something that you're confident would be helpful to students in your district or school. And so, you want to give it a try. And so, the thought is that, well, let's build our knowledge base. So, let's have an opportunity to actually implement things that we think might work.

41:18

And so, in doing that, it has to be done in a way that will indeed contribute to our knowledge base. And so we can't just go out there and try stuff. That's not helpful to anyone. When we decide what might be beneficial, we really need to think through it carefully. So there needs to be a logic model. Some kind of theory of change, what do we think might happen? And why? What's the plan for implementation? How can I make this work? How are we going to ensure that we can follow through? And then how will that practice be evaluated? And what are we going to do at the end? And we talk about this at the beginning.

41:59

What are we going to do at the end to ascertain whether this was effective or not for our students? How are we going to know if this worked? And again, all of this is established at the very beginning.

42:11

It is not an afterthought.

42:16

And so, as you think about assessments, those are just some criteria of assessments that undoubtedly are not unfamiliar to you. This last bullet is important, as we think about assessments that are not over aligned to the intervention. And so, this might mean something, like, I've shared the example of using reading passages on the assessment that were delivered, that the students read during the intervention. That might be over alignment.

42:48

Or a common example that's used is you're utilizing spelling program and so, on the assessment of that program, you're actually using the very same spelling words that the students are taught in the course of that intervention.

43:04

And so, that would be an over alignment.

43:08

So, we can't be sure that it was the intervention that really was helpful. Was it the fact that these students were just directly taught those skills?

43:20

So those are, and that's where I told you, we were going to spend the bulk of our time this morning, is looking at the criteria for those evidence levels. And so, we did that quickly. I believe you will have access to this, so you can go back and relook at it if you'd like to. But these are some different things that you really need to think about as well. In addition to those evidence levels, so that the evidence piece is one piece. But then, as you think through what is going to be beneficial, most beneficial, for the students in your district or school in regard to interventions, you need to think about these things that are on your screen.

44:02

First of all, were the results statistically significant?

44:06

And what that means is that the likelihood that this worked is not due to chance. It really is the results that were achieved with the study, are a result of the intervention that was implemented in this study.

44:22

So when you see statistically significant, that's what that means.

44:28

It means that the results that were achieved were likely not due to chance.

44:36

Now, a little bit different, is that next term that I've bolded for you, and that's are the results substantively important?

44:47

And this is different.

44:50

Just because results are not due to chance, doesn't necessarily mean this is an intervention that you should choose. You really need to look at, are the results worth our while? Are they worth the investment in professional development? Are they worth the effort in the investment of these materials and the time of our students, et cetera? So you need to look at the effect size. And is it really substantively important? So I'll give just an example.

45:24

So, let's say you fill your bathtub up with 12 inches of water. Now you have the goal, what you'd like to do is raise the level of the water in the bath tub.

45:38

So what you do is you go to the kitchen and you get an eight ounce coffee cup and you fill it with water and you go back to the bath tub and you pour that eight ounces of water in the bath tub that has already 12 inches of water in it.

45:53

Well, you measure the water now and it's like 12.1 inches.

46:01

All right, you've raised the level of water. It's not due to chance you know that.

46:08

But, in raising that level of water, was that enough?

46:13

Or, should you have gone to the kitchen and gotten under the sink and gotten a bucket?

46:18

Then filled your bucket and gone back to your bathtub and poured that bucket of water in there and then you get 13 inches of water now on your bathtub.

46:30

So that's what you need to think about.

46:32

Did you invest any more time to get the bucket rather than an eight ounce cup, probably not? Right? And so we need to make sure that whatever we're selecting not only has statistically significant results, meaning the results weren't due to chance, but they're substantively important. They're worth our time and effort.

46:53

And so the What Works Clearinghouse considers point twenty five of an effect size to be substantively important. And when you peruse a study, you'll probably see those words. You'll see substantively important. You may see the point two five, but be looking for those words. Statistically significant, not due to chance. Substantively important, meaning it's really worth your while.

47:24

And so then I share a little bit about the effect size there. Again, that point tw0 five is considered what you need to look for.

47:34

You also need to think about, so, you pull something from whatever website. It has strong evidence, so you're excited about that. You need to look at the population where that study was conducted, and the sample, the participants in that study.

47:52

Do those kids look like your kids?

47:56

So, if you're in rural Hardee County, was this study conducted in a rural area like yours? Or was this study conducted in a very urban area that looks much different than yours?

48:14

And that's not to say that you won't get similar results, but it is to say, you need to be cognizant of that. Be aware of where that study was done and the characteristics of the students that participated.

48:31

And then, finally, and that last bullet, may be the most important one on the screen. And that is, do you have the capacity to implement that intervention as they did in the study?

48:47

And that's really important, because the chances of you getting the same results, if you implement differently, are probably not that great.

48:59

So, and, I've seen this before, you know, where districts may choose an intervention, and in the study that was conducted, it would say, so, this is done in rotations. 30 minutes every day on technology, 30 minutes in direct instruction with a teacher and 15 minutes of independent work.

49:29

And so, then you go, well, you know, we really don't have like 30 minutes every day for technology, so, maybe we'll just do this like that. We'll do the technology piece like twice a week. And then, our direct instruction with our teachers, we probably have 20 minutes a day to do that, we don't have the 30. And then independent work, we could probably do 20 minutes a day on that.

49:54

So, if you implement it in a very different way than it was in the study, you just can't be sure that you're going to get the results like they did when they studied that particular intervention. So, if you don't have the capacity to implement, you have to figure out how you can increase your capacity. How you could possibly garner the resources to do that, or manipulate the schedule, or whatever it might take. Or you need to move on to something else and say, you know, we can't implement this well, let's just be honest. Let's look at another intervention, and let's look at that and see if it's a better fit for us.

50:40

So those are just some considerations beyond the evidence level.

50:46

And not to mention your need. And so that's, that's a place where you start. What do we need? What do our students need? And then we think about those evidence levels, and certainly we want the strongest that we can select that we can actually implement, as it was designed to be implemented.

51:07

OK, and so this is just a little bit more about statistical significance and also effect sizes.

51:15

I won't go into that too much, other than to say that you may see references to P values, and that's a probability value. And what that reflects is how likely the change was, how likely the results were, whether they were due to chance or not. And so, you'll see that scale.

51:37

And then, below that point zero five, is where you want to be. And so, the lower the P value, the less likely that that change that was observed was due to chance.

51:55

Here's a rubric, and you have this as a handout.

51:58

And so it might be helpful for you to pull it up if you have more than one screen. As we look at, we're going to take just a few minutes and look at the articles that are in your handouts, as well. But this rubric is just a really a good, concise, kind of way when you're reviewing research articles, to just gather some information and quickly identify, first of all, is it an RCT? Is it a QED? Is it correlational? To be looking for those things that we talked about. So there are some initial questions. You want to look for a literature review. Oftentimes that's done right off the bat by authors. You want to look for their research questions. What was a study looking at? And so there'll be at least obviously one, perhaps more research questions. And so what are they looking at?

52:55

Does their proposed kind of way of looking at that makes sense. And then, looking at what we talked about on the prior screen. What's their population? What's their sample? Which are the participants? What's the intervention that they are implementing? Do you see groups? Do you see a control group or comparison group?

53:16

Along with an intervention group, were students, or participants randomly assigned? Do you see that? And then, based on the answers to those questions, then, you can look to determine, was that a randomized control trial? Was that a quasi-experimental design study? A correlational or some kind of other design? And so, I really like this rubric because it's just really kind of a quick way for you to peruse an article and get a sense of it overall in regard to research design.

53:53

OK, so we're going to take just a few minutes, and we're going to look at three different articles, and we'll look at them briefly, you have those handouts in your handout section.

54:14

So we're going to look at first, the first article. It's an impact evaluation of the US. Department of Education’s Student Mentoring Program.

54:23

And all these articles have to do with mentoring, but they serve the purpose of sharing with you what we should look for.

54:35

I've annotated these for you. We don't have time necessarily, to read them carefully. So I wanted to point out just a few things.

54:46

So this is obviously a reputable report, right? You see, it comes from the Institute of Education Sciences, so we know that that's reputable.

55:02

And so this is the executive summary. And this gave us enough, I think, where, again, we can just look through quickly and identify some of those components that were on that rubric that we talked about.

55:16

And so here we have at the very beginning, you know, they have the preface for the study.

55:24

And then the framework. And you see all kinds of references to research. This is their literature review here.

55:32

And so you see that. I see actually names of some of my colleagues.

55:38

And so, information regarding the student mentoring program is there. And here is where you get into what we want to look for in regard to design.

55:53

And so here, and I've highlighted for you.

55:57

This study employs a student level, random assignment design. So that tells us, right off the bat, that we have a randomized controlled trial.

56:08

This is the way students were assigned, they were assigned randomly.

56:14

So we know, we have groups and we know we have that randomized component there.

56:22

Here are the research questions.

56:25

They've nicely bulleted them for us. So, you can see them clearly. This is what the study was looking at. So that's important for you to know, what were they even examining or exploring?

56:38

So, they were looking at this particular programs. This mentoring program in regard to students’ interpersonal relationships with adults, personal responsibility, community involvement. That's a big question in and of itself. What about school engagement?

56:53

So they were looking at that, and then they were looking at behavior of students.

57:01

Here we have, the population. This was the pool from which they selected their sample. So these did not all participate.

57:13

But this was the population from which they chose participants. So what they were looking at was the mentoring programs themselves. And so that's their population.

57:30

Here, again, this is nicely labeled so we know that this is going to address the study sample. And so it talks about the 32 that were selected.

57:45

And then, as we scroll down, we'll see a reference to the attrition here. And I don't know that it ever really says the word attrition, but it says they never received mentoring from the program.

58:04

So, although they were assigned, they didn't participate.

58:08

This is attrition. So even if you don't see that word, if you see statements like this, where they never received what they were supposed to receive, they moved, or, you know. It doesn't have to say attrition, but this line, which tells us that students left.

58:30

OK, then we see, actually, they looked at several different domains, and they reflect that, this is the result. It did not lead to statistically significant impacts on students in any three of the outcome domains. So they really didn't see any difference in this particular study in regard to that.

58:52

They did, however, see some subgroup differences. And sometimes, there is an examination of, not just, your group's as wholes, but also they break it down into subgroups. And so, they looked at boys, they looked at girls, they looked at different age groups of students, and they did find some differences, there, some impacts there.

59:20

And, so, that's basically that. So, again, just perusing that and just working through it relatively quickly, we can see that it wasn't RCT that students, their workgroups, students were randomly assigned. We did see a reference to attrition, and we did see references to the results and a statistically significant results that they received with subgroups.

59:47

So just a very quick look.

59:51

So next we want to look at this article.

1:00:00

And this again on mentoring. And so this article “Mentoring At-Risk High School Students: Evaluation of a School-Based Program”. So similarly, they're looking at a mentoring program.

1:00:14

And similarly, we see the lit review here, the rationale for this particular study right up front.

1:00:23

You see, they have a methods section, and they tell us about their participants.

1:00:30

So, their sample is here.

1:00:33

The sample was composed of 86 at-risk 10th grade students from 1 of 2 high schools in a large suburban Texas school district. So, again, as we think about the interventions we choose, we want to think about the population. So, this was done, in a large, suburban, Texas school district.

1:00:54

Does my school kind of look like that? No. Then the population overall, then it tells about the cultural racial breakdown of that population, OK?

1:01:10

Here, it tells about the purpose, and here it's not as nicely delineated as it was in the report we just looked at. So, in this particular article here, you have to kind of peruse and skim down. The research examined the effect of a mentor program on identified at-risk students. Specifically, the following questions addressed, were the following.

1:01:37

And so, those questions are there. They're just in the midst of the narrative and so you just have to look a little bit more carefully to find them.

1:01:47

We already talked about I should have gone to this column first.

1:01:49

We talked about the sample in the population and here they talk about establishing baseline equivalence.

1:02:00

And so they talk about making sure that those groups are as equivalent as they can be.

1:02:09

And here, they talk about this being a quasi-experimental study, not an RCT.

1:02:18

And this is why they gave a reason why, due to ethical and practical constraints. The random selection of students for experimental control groups was abandoned. So they felt like ethically and practically, they could not randomly assign students. And so they admit that right up front and they say this is not an RCT, we had to assign our students intentionally.

1:02:48

So here, it just tells about the efforts to establish that baseline equivalence, knowing that they need their groups to be as similar as possible.

1:02:59

Talks about what they did under the treatment, the measures that they used to establish the success.

1:03:07

And then they talk about the results.

1:03:13

They talk about problems that they had in the midst of the study. Just like in school districts and schools, in research, not everything goes exactly as we would hope all the time. And so, they talk about the issues that they encountered in their attempts to address those problems.

1:03:32

There's a table there with a different information about their groups. And here they admit that they couldn't get to baseline equivalence, that their groups were not similar.

1:03:47

So that article, again, just to peruse it, look for that criteria that we talked about and ascertain what kind of study it is, what was the design, taking a look at that baseline equivalence. And you have to just kind of wade through some of this sometimes to gather that information.

1:04:14

And then finally, this last article that we'll look at this morning, you'll note right off the bat, this is an article about “Coaching Parents to Use Naturalistic Language and Communication Strategies”. So again, you have a literature review at the very beginning of the article. A fairly sense of one. Then, though, it's very clear that what this article is about, is about just sharing those kinds of strategies with parents. And so it says right here, the coaching process and strategies that are delineated in this article are drawn from the previous research and based on our experiences in coaching families and professionals in the field of EI.

1:05:16

So there's no intervention groups here. There's no comparison groups here. It's just a description of some strategies that they have found research to support. And in these regions researchers' own experience that they've used and found to be helpful.

1:05:34

But this certainly doesn't meet the criteria of an RCT or a quasi-experimental design. And admittedly so, it's not meant to be that.

1:05:50

So it tells about implementing the strategies and so forth.

1:05:57

And the conclusion gives you every indication that again, that what they're saying is that engaging in this parent coaching may promote language development in students with language delays or disabilities.

1:06:19

Again, we can't, from this article, establish causation. We don't have comparison groups. We can't look at all of those other criteria. So what they're saying is, though, in their opinion, correlationally, this may help.

1:06:38

If you were choosing an intervention, you couldn't use an article like this to establish evidence at one of those ESSA evidence levels. Certainly not the strong or moderate. You might be able to make a case maybe for correlational, but it would be a difficult case to make.

1:07:08

So those are the articles I wanted to share with you. Again, just going through quickly with them, working to apply some of what shared with you this morning.

1:07:23

And so, I'm going to flip through, we've looked at these articles, I didn't just go back and forth.

1:07:29

So, basically, what I’ve tried to iterate this morning is that we know that all research is not created equal. So we need to be careful in how we select our interventions. We need to be good consumers of research. We don't need to be researchers ourselves, necessarily, but we need to go to reputable sources where we see names of people that we recognize and that we're familiar with. That those sources are reputable and familiar to us. We need to select strategies and interventions and programs that meet our needs and the needs of our students. That also, then, are the highest level of evidence that we can identify that we have the capacity to implement well.

1:08:19

And so, you know, again, just that final thought, that we're not researchers. But we definitely need to be good consumers of research. We can do that. If you want to delve more deeply, certainly would welcome you to visit some of these websites.

1:08:38

The What Works Clearinghouse Group Design Standards training, and I've been through that myself, is online. You can go at your own pace and it's divided into modules and you may wish to just do a module or two. Maybe you're more interested in attrition and want more information regarding that. There's a module on Attrition within that professional development, that, Group Design Standards Training. And so that's free of charge. And the website is there, you can go there, and like I said, you can work through it on your own. The What Works Clearinghouse glossary is just a good resource for those technical terms that you might want a more friendly definition for. And so, that glossary is available for you, and the website is there. And then the ESSA levels of evidence site, you might want more information regarding that initiative, so that website is there for you as well. So, though, all of those resources, undoubtedly, there are more where you can gain more information and grow in this particular area, Should you have the desire to do so. OK, I lovingly name this homework, OK. This is certainly not something that you necessarily have to do, but you'll get an e-mail in the next couple of days, regarding this webinar. And there'll be an article that'll be attached to it, and it will be an article that has to do with reading intervention. So, if you'd like to just get some practice and use that rubric, the rubric also was in your handout, so you can download it. And just take a little while, and go through the article and see if you can identify these things. Determine what level of evidence that intervention is. And then, note those characteristics that you need to know about within that article. And so, I just provided that for you, in case that you wanted to take some time and do that on your own.

1:10:52

And this is just my contact information, and you are certainly welcome. I'm glad to hear from any of you at any time. I'm glad to, to help and support and provide resources.

1:11:03

It's absolutely my pleasure. Feel free to e-mail me or give me a call. That number right now is forwarded to my cell phone. So like, some of you, I'm working from home, and then others of you, I know you're back in your districts and your buildings. So, again, just thank you for everything that you do to support your teachers, your reading Coaches, your students in your schools. So, I just truly appreciate you, and I know that you are doing an incredible amount of work in these very uncertain times. So that is all I have to share this morning. So I will turn it back over to Rebecca. So thank you so much.

1:11:51

Lori, thank you. We've gotten so many comments about how helpful this is and I know that this is something a lot of our districts have been facing. So, thank you so much for that.

1:12:02

What I'm going to do is open it up to questions within the question box, if you have questions before we go.

1:12:12

I will say that you'll be getting additional information. Again, this is one within our series.

1:12:18

So, next month, we'll be doing the information about oral language for October. Shortly after you sign off, about an hour after you sign off of this you'll be getting an e-mail. It'll come from Katrina Figgett. And it will have information, will have registration for next time. It'll have some of the information from this time and a survey.

1:12:48

Please fill out that survey because we're going based on district need as it's communicated to us to arrange this series. I see a comment, someone would love a session on research on coaching in the future. And that's good to know. I will let you know that statewide we are working on coaching, getting a committee together to look at upscaling coaches per the CARES Act. So that's definitely something that we'll be sending more information out about.

1:13:22

I'm so glad you enjoyed.

1:13:27

OK, question is about those smaller publishing companies that say they don't have the resources to conduct research.

1:13:49

One thing that we've been sort of encouraging people to do, in the meantime, is, one, highly encourage them to do that.

1:14:00

Sometimes it's a matter of timing that they have to get those resources together or they have to get enough exposure of their product. But if they're using research based strategies, that something that you can either go through the curriculum or the materials to find. Or work with them to find something where there is a research basis or that evidence base.

1:14:30

And again, I'm glad you all enjoyed.

1:14:33

If there aren't any further questions, feel free to reach out to us at JRF! or, again, you have, Laurie Lee’s contact information. We are always happy to answer your questions. I'm so glad that so many of you participated.

1:14:48

We're very much looking forward to this.

1:14:50

And if you will, gather those questions together for oral language, so that next time as we go, you have that ready, and we can answer all the questions that you have.

1:15:04

I think it's going to go very well. And, again, thank you so much.

1:15:09

You have a lovely day.

1:15:13

Oh, a question about trusting the publishing. What I would definitely do, the research done by publishers, I would look to those things that Laurie talked about to make sure that those are included.

1:15:28

Now, very often they do get third party researchers to do that.

1:15:34

But, in going through that article, one of the things that you'll be getting when you receive the e-mail, is it will have that homework, that Laurie Lee referenced, the sample article for you to go through. And I think that sort of going through the sample one and seeing what some of those requirements were, will give you a better sense of that.

1:15:57

And, of course, if you have questions, please, always feel free to reach out to us. The levels of evidence currently required by the K 12 Reading Plan, are strong, moderate, and promising. There is no talk of changing that. We plan on staying with those three particular levels. You have a lovely day.

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