

Designing effective, high-quality, virtual professional learning for educators

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Looking at the consequences of COVID-19, it's often easy to focus on what's lost and not what has been potentially gained. While traditional in-person professional development has been the norm, virtual PD, despite some challenges, presents unique opportunities for providers. Pivoting from in-person to online can be an efficient way to meet learning needs, even for those people used to the in-person touch. What's key is setting up the conditions for a growth mindset.

Below are 10 strategies for educators to design effective, high-quality, virtual professional development learning environments for educators, with practical implementation suggestions.



1 ACKNOWLEDGE HUMANNESS

The virtual environment can feel detached and isolating, as if everybody is on their own island. It can be difficult to read body language and emotions. That's why it's extremely important to cultivate empathy by engaging meaningfully with people in your virtual room. Spend time building connections and relationships with participants. Here are some ways to set up your learning experience to counteract the challenges of self-isolation and build a learning community:

- ***Connect to the people in your room***

While ice breakers can be polarizing, there are ways to authentically allow for teachers to connect to you and other teachers. You can use breakout rooms, the chat feature, and [digital sticky notes](#) to ask teachers about something that brings them joy, or [ask questions that build a resilient, connected community](#). Meaningfully connecting is even more important in a virtual setting and starting PD with a human moment allows participants to have time to be heard, accepted, and understood. Questions and activities must be designed intentionally to create the sense of belonging needed for a quality PD experience.

- ***Begin with norms***

Whether in-person or virtual, establishing [norms](#) with learners allows for equitable participation and setting of the culture of the learning environment.

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Encouraging sharing of airwaves, the power of ‘yet,’ and safety of asking questions allows teachers to feel comfortable and valued as contributors to the session. These norms must be uplifted throughout the session in order for teachers to participate fully and feel supported. In addition to setting learning norms, facilitators should also set norms for technology use, such as use of naming, chat, video, and microphones. It can be helpful to ask participants to rename themselves for easier interaction and identification, and to mute microphones when not speaking.

- ***Consider mindfulness and relaxation***

While stress isn’t new to teachers, we know they are experiencing an unprecedented amount of anxiety, exhaustion and trauma right now. While we can’t control what they experienced before a PD session, we can honor those feelings and provide a strategy for transitioning to a learning activity and refocusing attention. Build in time for them to participate in mindfulness activities such as unclenching their jaws and shoulders, and using their five senses to bring themselves into the moment.

- ***Build in breaks***

Being on a screen and seated for extended periods of time is not healthy in-person or virtually. Try to build in motor and brain breaks at transition points in the session, and at least every hour. In addition, make sure your session segments don’t go on for too long- try to find a balance between too many and too few transitions to new activities.

- ***Give grace with video***

While it is nice to be able to see your participants to connect with them and interpret body language for feedback, it should not be mandated. Here are [some reasons](#) why facilitators and teachers should not require video during remote sessions, and some alternatives for connection.

2 KNOW YOUR AUDIENCE

As with in-person learning, understanding the diverse contexts that teachers face and what they hope to get out of a PD session will set everyone up for a productive time together. Here are some ways that you can connect with teachers to be successful in a virtual environment:

- ***Send out surveys to teachers ahead of time***

Use a Google Form or Survey Monkey to get a sense of teacher background knowledge and classroom contexts. By asking teachers how often they will teach science virtually, what devices they have, what devices students have, and if they are teaching live with students, you can build a session that feels relevant

and immediately applicable to their classroom. This will ensure that you do not present ideas or resources that teachers are unable to use.

- ***Ask teachers what their hopes are for the PD***

Be willing to be flexible during your session. Even with the best laid plans, sometimes there are communication breakdowns and what teachers need and expect out of a PD is very different from what you had designed. While you might not be able to completely shift gears, beginning the session by asking teachers to share what they hope they will get out of the PD will allow you to focus your time on what is needed and cut extraneous portions. You can use digital sticky notes or the chat feature to get a sense of the group's expectations.

3 REDUCE COGNITIVE LOAD

Learning in a virtual environment is a new situation for many teachers. We want them to learn from our PD session, but in order to do that, we must consider cognitive load and its implications on learning. Any time we use our working memory, there is a certain amount of cognitive load that our brains must bear. There are three types of load – that which is intrinsic to the task (for example navigating the tech tool), that which is germane (these are the important things we need to transfer to long-term memory), and that which is extraneous (anything distracting that is not helpful to the situation). Here are some ways to reduce cognitive overload for PD participants:

- ***Select one or two tech tools***

If teachers must navigate between multiple apps and websites during your presentation, they will likely feel overwhelmed and unable to keep up or process the information you're trying to share. It's best to use only one or two apps, such as Zoom and Google Slides, to navigate back and forth. At the beginning of your presentation, you might just keep them on the Zoom screen while you share your screen, instead of asking them to navigate to another resource. Teachers may not have access to large computer screens or multiple screens. When you are presenting, consider whether teachers really need to navigate back and forth between web browsers, the Zoom chat, your presentation screen, or breakout rooms. Similarly, only focus your presentation on teaching one or two tech tools, and encouraging teachers to do the same for students.

- ***Give clear directions in multiple modalities***

Being in a virtual space means that teachers are trying to keep track of a lot of things at once. They need both written and verbal directions for what they are supposed to be doing all throughout the session. Repeat instructions, because it is easy to miss them. For example, if teachers are in Google Slides with you, you can provide a "road map", saying things like, "I am now on Slide 15 if you are

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following along with me.” You can type instructions into the chat feature or on the slides you are using, but be clear about where teachers can find information from the beginning.

- ***Create routines***

Keep routines simple and as consistent as possible. Changing things up is disorienting. Creating consistent ways of interacting with participants is anchoring. If you want to use the chat feature or a Google Slide as your parking lot, be sure to remember to check it often. For breakout rooms, keep them in the same groupings if possible to create community and consistency. Give roles such as timekeeper, manager, and recorder. Post all directions in one consistent place on slides. If you’re using interactive slides, create expectations for how to use them. Remember the goal is to reduce any cognitive load that is unnecessary for the learning at hand.

4 TEST THE TECHNOLOGY

Learning virtually adds another layer of complexity to navigate during professional development and understanding technology is a prerequisite to get to the learning goals. Here are some ways that you can proactively test the technology to ensure a smooth session:

- ***Open the session early***

Sometimes teachers need extra support with the technology being used for virtual professional development, which can be a barrier for learning. It can help to open the session early to provide additional support ahead of the session. Communicating that you can be there to support teachers with technology, can encourage teachers to ask questions and get comfortable with the technology so they can be prepared to engage in the learning process.

- ***Master and know the limitations of tools and devices***

It can be helpful to choose a small number of tools and get extremely good at using them. It is important to not only know what you as the presenter will see, but to also consider the participant view. Be sure to consider what types of devices the participants will use and ensure that even participants on a phone or tablet will be able to actively engage. It can be helpful to practice sharing your screen, creating breakout rooms, and monitoring the chat in a low risk environment before presenting to teachers. While it is important to know the features of a tool, it is equally important to note limitations and variations of tech tools, by device. For example, in Zoom, when participants are in the breakout rooms, you are unable to monitor all of them! One way to get around this might be to log in to Zoom from multiple devices so you can “participate” in more than one room. This is only useful if there are few breakout rooms, but you can also

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join various breakout rooms to check in on the conversation. Logging in on a computer and a phone or tablet can also allow you to see what participants see to better support teachers with the technology across devices.

- ***Check links and be prepared for glitches***

Before the session, be sure to check the links to any of the platforms you are using to host the meeting or enable collaboration. Check the settings in Zoom to be sure they are set to your preferences. For example, under Schedule a Meeting and In Meeting you will be able to choose video and audio settings, disable join before host, embed password, turn the chat on or off, save the chat, allow annotation and screen sharing. It can be helpful to “enable waiting room” so that early arrivers don’t walk in on last minute pre-PD coordination, “mute participants upon entry” so that facilitators are not distracted by background noise, “record the meeting automatically” so there is a recording to share with participants for future use, and if possible, pre-assign breakout rooms to reduce the scramble to assign teachers to specific breakout rooms during the session. Some ways to prepare for possible glitches include sharing the slides in advance, including the Zoom link on a slide in case teachers get kicked out, having multiple ways to access the slides and Zoom room, and providing your phone number in case teachers are having difficulty connecting. It can also help to include an additional facilitator to handle Zoom logistics; participants can then directly message this person to get technical support during the session and allow you to continue facilitating the learning.

While there may be occasions when you need to speak to introduce a topic, facilitate reflection, or frame activities, try to balance your own air time with plenty of opportunities for teachers to share what they think.

5 ENGAGE TEACHERS

Teachers need the same level of engagement during virtual professional development as they do in-person. Creating an engaging session supports retention of knowledge and motivation to participate. Virtual engagement can look very different from in-person. Here are some ways that you can engage teachers remotely:

- ***Invite dialogue***

If you want to keep teachers engaged, make sure your virtual PD session doesn’t become a monologue. While there may be occasions when you need to speak to introduce a topic, facilitate reflection, or frame activities, try to balance your own air time with plenty of opportunities for teachers to share what they think. Breakout rooms with carefully chosen activities or discussion questions, use of interactive slides or digital sticky notes, and whole group reflection discussions all ensure that teachers know their voice is valued and gives them opportunities to learn from each other. Another great way to increase engagement is to give wait time for individuals to think before asking them to share out to a small or whole group.

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- ***Allow for diverse ways of participation***

Provide multiple entry points for teachers to communicate their thinking. Some teachers may not feel comfortable sharing with the whole group, but will be more likely to participate in breakout rooms. Other teachers may prefer to write down their thoughts in the chat function. Teachers can also show what they’re thinking by using the thumbs up or clap reactions, or the annotation feature on Zoom. For example, if teachers are not comfortable using Google Slides or Jamboard sticky notes, invite them to participate by typing into the chat instead.

- ***Let your sessions be a safe place to practice***

Teachers may feel overwhelmed with the amount of tech tools and programs they are being asked to learn. While your session may focus on content or pedagogy, if the technology is the way to deliver the content, you need to allot time for teachers to practice the use of these tools. For example, if teachers are still figuring out Zoom functionality, you could designate a teacher as the meeting host, allowing them to practice creating breakout rooms. Give them editing access to the Google Slides and have teachers view them in editing mode so that they can manipulate the content on the slides along with you. Anything that “lifts the curtain” so that teachers can see behind the scenes how these tools are used will feel practical and immediately useful.

6 BE FLEXIBLE AND RESPONSIVE

When facilitating PD in-person, it can be easier to notice when the session is falling flat because of side conversations or observing teachers drifting focus. In a virtual setting, it can be more difficult to notice these changes in the room. Here are some ways that you can ensure that your session is as helpful as possible:

- ***Take frequent room checks***

Explicitly ask teachers to let you know how things are going for them in the session. Questions like, “Are you getting what you need right now, and if not, what are the gaps?” or “Would you all prefer to do the breakout room right now or have five minutes to process this on your own?” can help you understand what your next move should be. You can do this with an anonymous Zoom poll, the chat feature, or thumbs up/down voting. If you notice that teachers are not participating, it’s OK to ask if there is anything you could do to better meet their needs.

- ***Don’t be afraid to change course***

If you recognize that things are getting off track, or that the room energy is low, it’s OK to change course from your original plan. For example, if you get into

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a session and figure out that teachers can't participate in your model lesson because they do not know how to use the technology, you can take time to teach it, or you can figure out an alternative way for them to participate and get the same content.

7 DON'T SACRIFICE DEEPER LEARNING

Deeper learning is a process of working together to learn and develop knowledge that applies to real-world contexts. We want teachers to experience deeper learning for themselves so that they can better apply the principles of the PD and give students opportunities for deeper learning – here are some suggestions for how you can ensure deeper learning occurs in a virtual setting:

- ***Use tech tools to facilitate productive discussion***

For example, you can use Zoom as the key platform for hosting meetings and Google Slides as the main format to encourage teacher collaboration. In doing so, you can master the ins and outs of Zoom and use its various features, such as breakout rooms, polls, the chat function, and annotation, to effectively facilitate the PD session. You can use Google Slides, not only as a visual presentation, but also as a collaborative tool for participants to share their thinking by editing virtual sticky notes, directly. Finally, using Google Slides, labeled by breakout room with specific tasks and sentence stems, can both guide participants to have quality conversations, but also allow them to record their thinking so you can monitor multiple rooms by following the recording on the slides.

- ***Give teachers time to collaborate, apply and reflect***

During your session build in time for teachers to work together to consider how your session applies to their own problems and opportunities of practice. After model lessons, build in breakout rooms so they can share their thinking and how they would adapt what was presented for their own classroom. Before you go into breakout rooms, be sure to give individual think time so that teachers can process their thoughts. You can also utilize reactions (thumbs up, claps) and the chat to encourage all teachers to participate.

- ***Model best practices in the content***

STEM learning requires productive discussion. Use probing questions and [TERC Talk Moves](#) as you facilitate to deepen the discussion, foster content knowledge development for teachers, and model inquiry-based teaching strategies. You can put questions into the chat, and if you use Google Slides, you can put sentence stems into the notes section or on the side of the slides to remind teachers. Wait time and discussion time may need to be longer than in-person, so be mindful of how long you give teachers to respond after you pose questions.

8 ADVOCATE FOR IDEAL LEARNING EXPERIENCES

Every district has its own unique context that can influence the applicability of PD. In order to provide a meaningful PD experience, it is important to understand this context and advocate for the best learning experience for teachers. Here are some ways you can advocate for teacher learning:

- ***Partner with districts to customize sessions***

Different districts have unique approaches to learning, whether in-person or virtual. Some districts will use asynchronous virtual learning, while others are using synchronous. Others may have a hybrid approach. There are a wide range of technology capabilities – some districts use iPad, others use Chromebooks; some use Zoom, while others use Google Meets. Learning management systems may be in use, such as Google Classroom, Canvas, or Schoology. Ask the district ahead of time about these things so that you can contextualize your session in a way that feels immediately useful to teachers. Ask coordinators to provide you with teacher leaders that you can reach out to. Leverage their expertise and peer relationships so that you can tailor the PD experience to your audience. These teacher leaders can also co-facilitate the PD session and lead conversations about applying the learning with a district lens.

- ***Encourage grade-banding and subject specificity of PD***

When PD sessions become too large, it can be difficult to connect with participants and cater to their specific needs. It takes more time to facilitate productive discussions in a virtual setting. For these reasons, it is important to advocate for grade-banding and content banding of your sessions. Furthermore, there can simply be logistical difficulties with large PD sessions. Monitoring the chat, making sure all teachers get admitted, and making sure your Google presentation doesn't crash with too many participants are all good reasons to keep session numbers low. If you are unable to do multiple sessions, be sure to do grade level breakout rooms and have an extra PD facilitator to monitor the chat and participant entry.

- ***Be clear about the time needed***

Meaningful learning takes time, whether in person or virtual! It is important to allow enough time for deeper learning. When planning a session with a partner, communicate how much time is required to meet the learning goals of the session and be prepared to explain the implications of reducing the time allotted. It can also be helpful to have strategies for breaking the session into smaller modules and providing the opportunity for teachers to still meet these learning goals, but over multiple sessions.

If you are unable to do multiple sessions, be sure to do grade level breakout rooms and have an extra PD facilitator to monitor the chat and participant entry.

For those watching the PD at a later date, you can provide a document with guiding questions where they can record their thinking so that they have the same reflection opportunities as teachers who participated in live discussions.

- ***Follow up after the PD***

Giving digital feedback surveys and debriefing sessions with administrators allows the district or school to use this data to move forward in a way that best supports teachers. They can decide whether teachers will need deeper coaching, and what the next PD sessions should entail. In addition, send teachers the slideshow, as well as a recording of the Zoom so that they can revisit key learnings.

9 ALLOW FOR MULTIPLE LEARNING PATHWAYS

Adult learners have preferences regarding the best way to engage with professional learning opportunities. Virtual PD provides new avenues for learning that may not be present in person. Here are some ideas for allowing teachers to engage in multiple learning pathways:

- ***Record live PD sessions***

For those teachers who cannot participate or would like to review the content later, it can be helpful to provide a recording. Zoom settings can be created to do this automatically. Let teachers know ahead of time that the session will be recorded. For those watching the PD at a later date, you can provide a document with guiding questions where they can record their thinking so that they have the same reflection opportunities as teachers who participated in live discussions.

- ***Design self-paced modules***

In a well-designed self-paced module, teachers can obtain information on the intended topic by reading or watching, doing activities to deepen their knowledge through practice or discovery, and connecting the content to their classroom, school, or district. Online experiences can come as standalone or on-demand modules to fulfill an immediate need. They can also create continued social learning experiences where educators collaborate regardless of location or schedule.

- ***Share information ahead of time to allow for different processing speeds***

Some teachers appreciate opportunities to engage with the learning in advance. It can be helpful to send the agenda, presentation, and any other work ahead of time so that people can have extra time to prepare for your session and feel ready to go when it begins. It is difficult to require any pre-work, however, so this is best left as an option to teachers if they find it helpful.

10 EMBRACE THE POTENTIAL FOR INNOVATION AND GROWTH

Many of the strategies described in this article are actually similar best practices to in-person professional learning design, only with

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specific technology considerations. If you are used to providing PD in-person, it can feel disappointing or overwhelming to switch to a virtual format. However these challenges can actually provide potential for new opportunities and growth for both facilitators and teachers. Here are a few ways that virtual PD can allow for innovation:

- ***Connect with teachers in new ways***

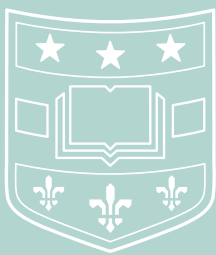
Online learning circumvents logistical barriers that can otherwise impede learning. Teachers, teacher leaders, instructional coaches, and administrators can access instructional supports online regardless of time and location. Providing for live or self-paced sessions, in addition to allowing for multiple entry points for participation, makes way for choice and differentiation to support the vast needs of educators.

- ***Hone your PD skills***

During in-person PD it is easy to rely on go-to strategies without intentionally planning the interactions and outcomes that you want to take place. It is easier to get teachers to collaborate or talk in-person. Surprisingly, the constraints put in place by technology, allow for more interactive or collaborative experiences than you might have otherwise had in-person. When designing a virtual PD, you have to be clear about pacing of the PD, roles in breakout rooms, and objectives of any activities. These clear goals and strategies help teachers feel grounded, supported, and motivated to participate and learn.

- ***Encourage virtual collaboration across schools and districts***

Using technology for online learning experiences creates meaningful connections among educators across the St. Louis region, the state, and the country, to one another, to resources and to real-world practice. Educators from different schools can come together to share their expertise and knowledge for productive adaptation of ideas presented.



ABOUT THE ISP

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