**Things to consider when planning professional development for online sessions**

Since March 2020, teachers have had an increased number of opportunities to interact with professional development online. This short article aims to share some lessons learned and points for consideration when planning and leading professional development using an online platform.

**Synchronous or asynchronous?**

You need to decide whether your session will take place as a synchronous session (every participant will be online at the same time engaging with the session) or as an asynchronous session (the session is pre-recorded and participants access these recordings in their own time).

When running **synchronous** sessions, you will need to decide whether to record the session. If some participants are missing this can be helpful but can also be overwhelming if the sessions are long. Offering live support should go alongside any recording sent out. You might decide to record the session if it would be helpful for participants to revisit some sections. You should let participants know they are being recorded; this can result in participants altering the way they engage with the session – particularly with people not switching their cameras on. It’s helpful to pause the recording if and when participants are in breakout rooms or are away from the screen.

A session, or parts of a session, can be devised to run **asynchronously**. This helps with access, flexibility, and avoids screen fatigue. Keep the synchronous sessions for activities that need to be live and/or collaborative and/or whole group. For example, if a session is information giving, then it is better to record and share, making sure that participants have a place to ask questions or comment.

An asynchronous session does not necessarily mean that participants cannot engage, for instance it is possible to ask participants to pause the video, reflect, add comments to a Padlet etc. Referring to their contributions during the next online session is good practice. One of the advantages of asynchronous sessions or activities is that participants can revisit elements after the session, by choice or design.

**Welcome and setting the ethos**

Building in time to set the ethos for the PD session is valuable. Introductions can be made prior to the session in an online community and included at the start of the synchronous session.

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| **Activity** | **Things to consider** | **Online versions / advice** |
| **Building a community** | Do participants have access to an online community?  Can participants introduce themselves prior to the session?  Do participants have a task to contribute to?  How can individual contributions be added to / developed? | Basecamp – use the message board to provide an ‘elevator pitch’ style introduction. Ensure that you, as the lead have done this to model what to do (reduces the barrier for participants)  Jamboard/Padlet - consider prompts that enable dialogue between participants (reduce fear of there being right / wrong answers). |
| **Starting the first session** | Will you open the session prior to the scheduled start time?  Will you tell participants they can join the session ahead of the scheduled start time and provide a space for them to chat?  Consider the screen you are sharing as participants join the meeting - it can be good to allow participants to see each other and say hello prior to sharing the slides.  How do you welcome people into the session?  Consider what you know about them prior to the session (link to their introductions in an online community) and ask them a question about information they have given. | Breakout rooms can be open for participants to go straight into to have some networking time. Use the ‘gallery’ feature so participants can see each other on the screen |
| **Icebreakers** | Have a task that participants can engage with for a few minutes and share their thoughts on.  Aim to:   * give everyone the chance to speak, making it easier for them to talk later in the session * level the playing field and put everyone on an even footing * get everyone to mentally check into the meeting | Tasks with multiple answers work best and may not necessarily be maths specific e.g. display a picture and ask ‘What do you notice? What do you wonder?’    Picture from**:** [Photos - Number Talk Images (weebly.com)](http://ntimages.weebly.com/photos.html)  Or a quick treasure hunt…go and find something yellow to share, look around the space you are in now and find one thing that you can describe mathematically  Chatblast: write a comment in chat but do not press enter until asked to. |

**Breakout rooms**

Using breakout rooms as part of a synchronous session allows discussion and ‘small group’ activity.

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| **Activity** | **Things to consider** | **Online version(s)/ Advice** |
| **How many rooms?** | It is worth considering how many people will be in each group before deciding on the number of rooms. | In most situations a breakout room should consist of at least three people. |
| **How long for?** | Do participants already know each other?  Do all participants need to share something or is it a group discussion?  Are they clear what feedback they will need to provide? | When leading PD face to face it is easier to understand what is happening in the room.  In an online situation you may like to determine how long the room will be in operation and what participants need to achieve in the room eg. ‘You have 10 minutse to discuss the prompts on the screen and add comments to the Padlet/Jamboard/Desmos etc.’  Make sure participants have the link to the platform being used before they go into the breakout rooms.  Incorporating a short break into this breakout time will allow participants to have some control over the time they spend in discussion eg. ‘In 20 minutes time we will come back to the main room. In the meantime could your group consider …. and have a comfort break if needed.’ |
| **Lost in transit?** | What will participants do if they ‘get lost’ moving to and from breakout rooms? | Always have someone (or a group) in the main meeting space to direct people that get lost. |
| **What will they discuss?** | How will participants ‘remember’ the discussion points? | Ask participants to take a screenshot or a picture with their phone of the discussion points. Or you could set up an external Jamboard/Padlet etc where the discussion points can be shared. |
| **How do I know discussion is taking place?** | Have you determined a clear focus?  Are participants aware of the focus?  Is it relevant to their current situation? | If using a Jamboard/Padlet, you can follow progress without visiting rooms.  You need to trust participants to talk about the things that are relevant to them at that point in time. |
| **Do I ‘visit’ each room?** | Will you be a welcome visitor or an intruder?  Are you checking up on participants or facilitating a discussion?  Will participants defer to you or be able to maintain a robust dialogue? | Tell participants what you are intending to do: visit or not visit. Tell them why you are going to do this.  Make sure they have a way to contact you if they get stuck. |

**Developing an understanding of maths pedagogy**

As in face-to-face PD programmes and sessions, activities are chosen to meet the intended outcomes of the programme/session. Here are some suggestions for activities that will enable participants to engage, discuss and reflect upon their practice.

| **Activity** | **Things to consider** | | **Online version(s)/ Advice** |
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| Do some maths, modelling approaches using carefully selected activities and questions etc. | You will be modelling how to teach or lead the activity in an online setting. It’s good to demonstrate ‘high tech’ as well as ‘low tech’ strategies within the session.  Do participants need any equipment?  How and when will you share this with them? What is it reasonable to ask them to provide for themselves – e.g. bring 30 counters…  let them know what alternatives would suffice – Lego bricks, Smarties etc.  Are there some online tools that will help?  How will the responses be shared?  Do you want to share the responses after the session? | | [www.mathsbot.com](http://www.mathsbot.com) has lots of online maths tools that you can use and/or ask them to use.  Low tech: draw or write something on paper and hold it up to the camera.  Desmos classroom or Google classroom offer opportunities for participants to share their work and for you to view and collate multiple individual responses.  *Note that Desmos is designed for maths.*  Use of a visualiser or graphics tablet: great for modelling mathematics as it happens.  Google Jamboard (and others) allow participants to annotate the screen. |
| Watch something: lesson, short video etc. | Does it need to be viewed at a certain point in the session? If not, can you circulate it for them to watch in advance?  Do participants need to watch it together i.e. you sharing your screen? | | Video files are usually large but can be shared in Basecamp or Teams. Web links eg. to Vimeo or YouTube are much easier to share.  Check in advance that participants will be able to hear the audio. A number of platforms have issues with central audio. |
| Read a research article | Will it spoil the session if the article is read in advance?  You could build some off-screen time into the session or provide as pre-reading.  Ensure that participants know how to access the article and give them time to print it.  Ideally share the article through the meeting platform – e.g. share the file through the chat facility in Zoom. | Better done asynchronously or away from the screen during the session. | |
| Card sort | How will the cards be prepared in the virtual environment? Are they statements the participants generate themselves or prepared statements to read? How many categories do they need sorting into?  Do you need to share the results from this activity? | | Jamboard/Desmos:  These collective spaces allow for things to be prepared in text boxes or sticky notes and to be easily manipulated on the screen.  Padlet may also be an option for this but the manipulation on screen is a little trickier.  Desmos allow for a ‘teacher view’ where participants responses can be shared.  Jamboard/ Padlet can be accessed and screen shared. |
| Prioritisation or ranking task | You may wish to design an activity that allows for participants to prioritise statements – a more structured card sort such as Diamond 9 can be used.  One structure that can be used is where participants have an allocation of points to spend – the more relevant/higher priority of the statement, the more points they allocate to it. | | Menti has specific tools that allow you points to be allocated to a series of statements. These are automatically tallied across the group. |
| Intersessional (gap) task | Just because the session is online does not mean that participants should not or cannot be set a task between sessions. However, it may be the case that you need to consider the nature of the task more carefully. Tasks should be designed to support participants with trying new things out and to share their learning with their peers, to move their learning from the theoretical space into their practice. | | Ensure the task is closely connected to the session that they have engaged with. In some cases, the task may need to be negotiated with the group and planning time for this built into the session. Participants appreciate seeing examples of what they need to return with, it reduces anxiety about doing it/not doing it in an ‘expected way’. Consider any potential barriers to the task and seek to reduce these.  A focused task can be beneficial – asking everyone to do the same thing, as this allows for deeper conversations about the learning they observed.  Tasks that are very open ended can be vague and participants discuss what they did at a superficial level rather than drilling down to the impact of their actions.  Ensure time is allowed in the following session for participants to share their learning and to learn from others about the task undertaken. |
| Share ideas remotely | As discussed previously developing a sense of community is important and can be harder in an online community. Consider an online space where materials and resources can be shared, and the PD lead can stimulate discussions. | | Basecamp is a tool the NCETM use for this as not only can documents be shared in files but there is a message board where discussion threads can be developed. PD Leads can prompt with questions or documents. It can also be helpful to set up a ‘sharing folder’ which signposts to participants that this is their space for populating. |
| Feedback session | How will the group share feedback? | | In the virtual world the space and time for participants sharing their own work or engaging with a task needs to be carefully planned. Breakout rooms are a key space for this to take place. Consider how long to allocate to each participant to share their work/engage with the task set, then allocate time for the small group to agree on aspects to feedback on before returning to the main room. Time then also needs to be allocated to the session for some feedback from each group. I try to keep breakout rooms to 3/4 people and allow 5-7 mins per participant (task dependent) plus an additional 7 mins to agree on what they will feedback. That generally means that breakout room will be around 30mins.  Prompts such as those below may be helpful:   * As a group agree 3 key points to share * Consider one aspect that affirmed your thinking and one thing that made you think more deeply/question your thinking * Identify one of the most interesting things you heard in your room.   Consider if written feedback is needed and, if so, for what purpose? What is the purpose of the task? Sometimes writing things down can be helpful – if they need to be engaged with later, sorted, ranked in some way. Other times the talk is the most important aspect.  Jamboard has a sticky note tool which can be really helpful for individual reflection – jot down thoughts and then bring them into the discussion. These can be easily manipulated on the screen which can be helpful for ranking / sorting. |