Blended learning in teacher education & training: design and implementation

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The potential of Blended MOOCs for Teacher Professional Development

- MOOCs (Massive Open Online Courses) can offer TPD at scale

- Teachers are ideal MOOC participants

- Teacher sharing communities can be created
  - Massive Open Online *Collaborations* (Kennedy et al., 2019)

- Global MOOCs can provide ideas, examples and contributions from around the world

- Blended MOOCs can add: adaptation to local contexts; modelling & practice environments; local communities of practice; motivation & support for engagement.
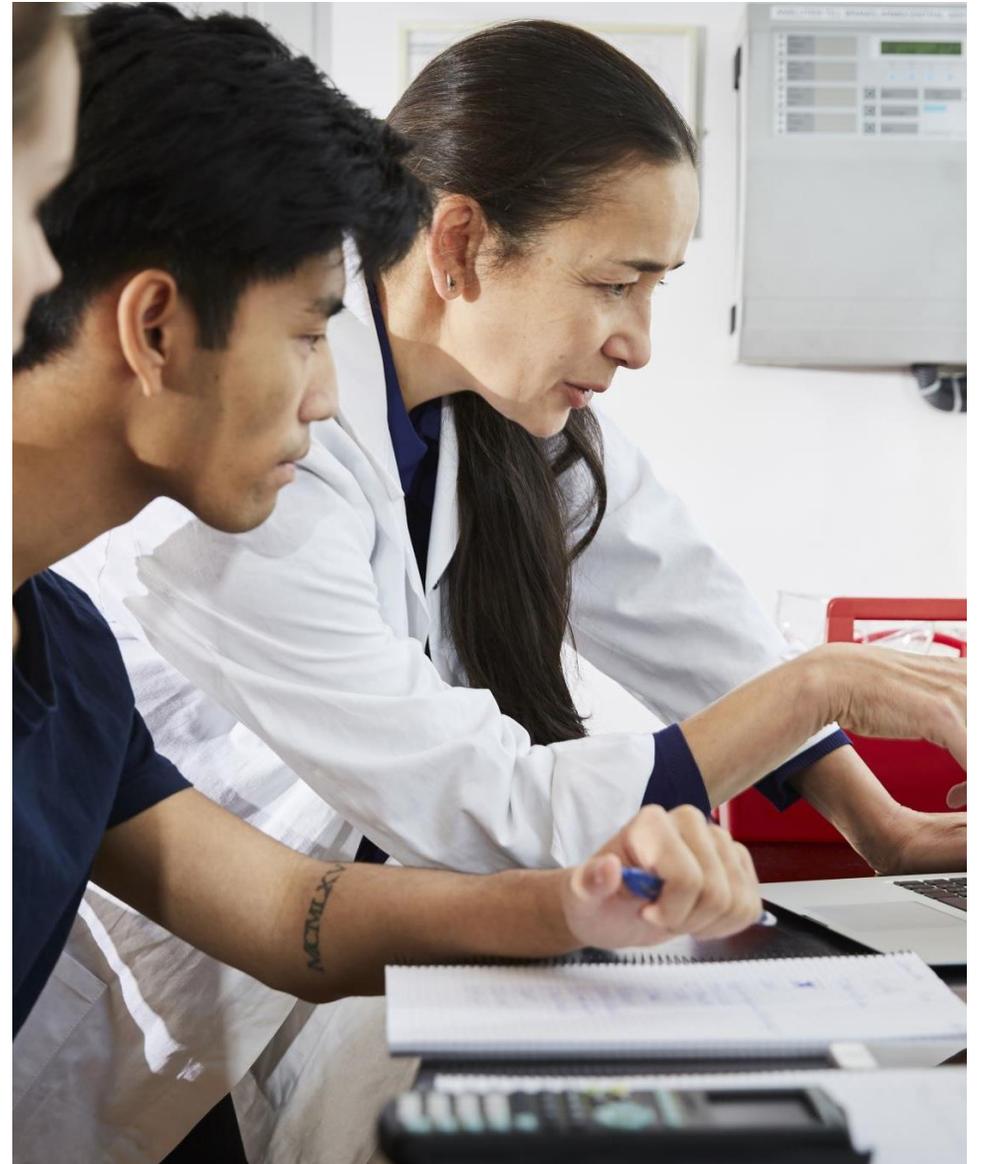
What is blended learning?

A "floating signifier" (Gynther, 2016, p. 21)

Combining face-to-face and online teaching methods:

"a combination of face-to-face experiences, in which learners are co-located, with online experiences, where learners are not at the same location". (Owston et al., 2008, p. 202)

But face-to-face can also include online/digital activities

Thoughtful combinations – not "bolted on"

"'thoughtful' because technology is complex and continually changing. It must be a thoughtful 'integration' because the digital is not a supplement, and does not simply replicate aspects of the conventional – each should enhance the other" (Laurillard, 2014, p. 10)

To assess the thoughtfulness, we need to specify both online and face-to-face elements

Blended Learning Models

- Rotation model
  - shift the learning between face-to-face and online according to a fixed schedule
- Flex model
  - primarily online learning (thus flexible) supported by a teacher in class
- Enriched virtual model
  - primarily online with face-to-face classes for support
- Flipped classroom model
  - switching of content acquisition that would traditionally be completed in class with the kind of activities that might be ordinarily associated with homework (Turan & Göktaş, 2018)
  - "freeing up valuable class time for more engaging and collaborative activities" (Graziano, 2017, p. 121)
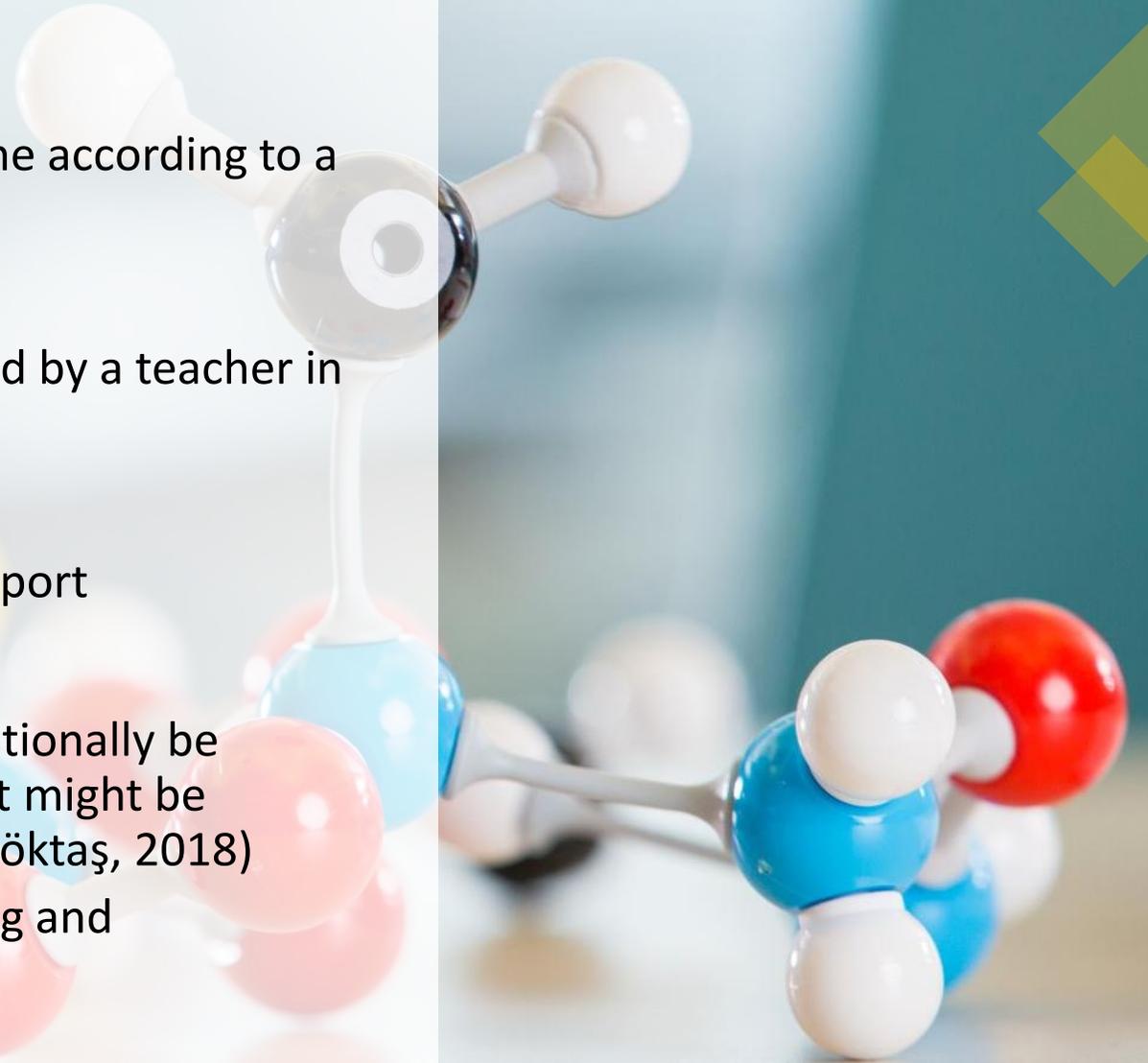
Alternative Terms

- Hybrid learning
  - blend of online learning with periods of intensive, residential face-to-face learning, for example at summer schools
  - support by video conference along with face-to-face classes as a blended MOOC design
  - Covid-19 emergency remote learning educator teaching on campus students simultaneously with online students

Does it work?

- Consensus that blended learning is at least as effective as a traditional or online course
  - Some evidence that it produces better learning outcomes (Owston et al., 2008)
  - Need closer attention to which *designs* are more effective
  - Teacher satisfaction with a blended approach is core to claims for its effectiveness
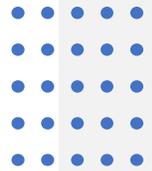
The Benefits of Blended Learning for Teacher Professional Development

Flexibility

Reduced costs

Collaborative teacher communities

Flexibility

- Barriers to attendance arising from time or location constraints are either removed or reduced (Brysch, 2020)
  - I watched the lectures whenever I wanted - sometimes while travelling on the bus, sometimes while playing a game or eating (teacher quoted in Kurt (2017, p. 217).
- TPD programmes can be based in teachers' schools (Owston et al., 2008)
  - increased opportunities for application to practice and to develop teacher learning communities with colleagues
  - One teacher explained that teachers could first watch the online video components of the [blended] program, implement them in their classrooms, and then meet with teachers face-to-face to continue the conversation (Brysch, 2020, p. 60).

Cost Efficiencies

- Online components require heavy investment up front …

- But savings from multiple runs (Kennedy, Laurillard, Horan, & Charlton, 2015)
    - Institutions need to rethink their financial planning models (Bates, 2000)

- Higher salaried teaching staff replaced with less experienced, therefore cheaper, teaching assistants to moderate Twigg (2003)

- Resulting economies of scale can benefit governments facing increasing demands for retraining and professional development of the workforce including health care and teaching (Marrinan et al., 2015; Kennedy & Laurillard, 2019).
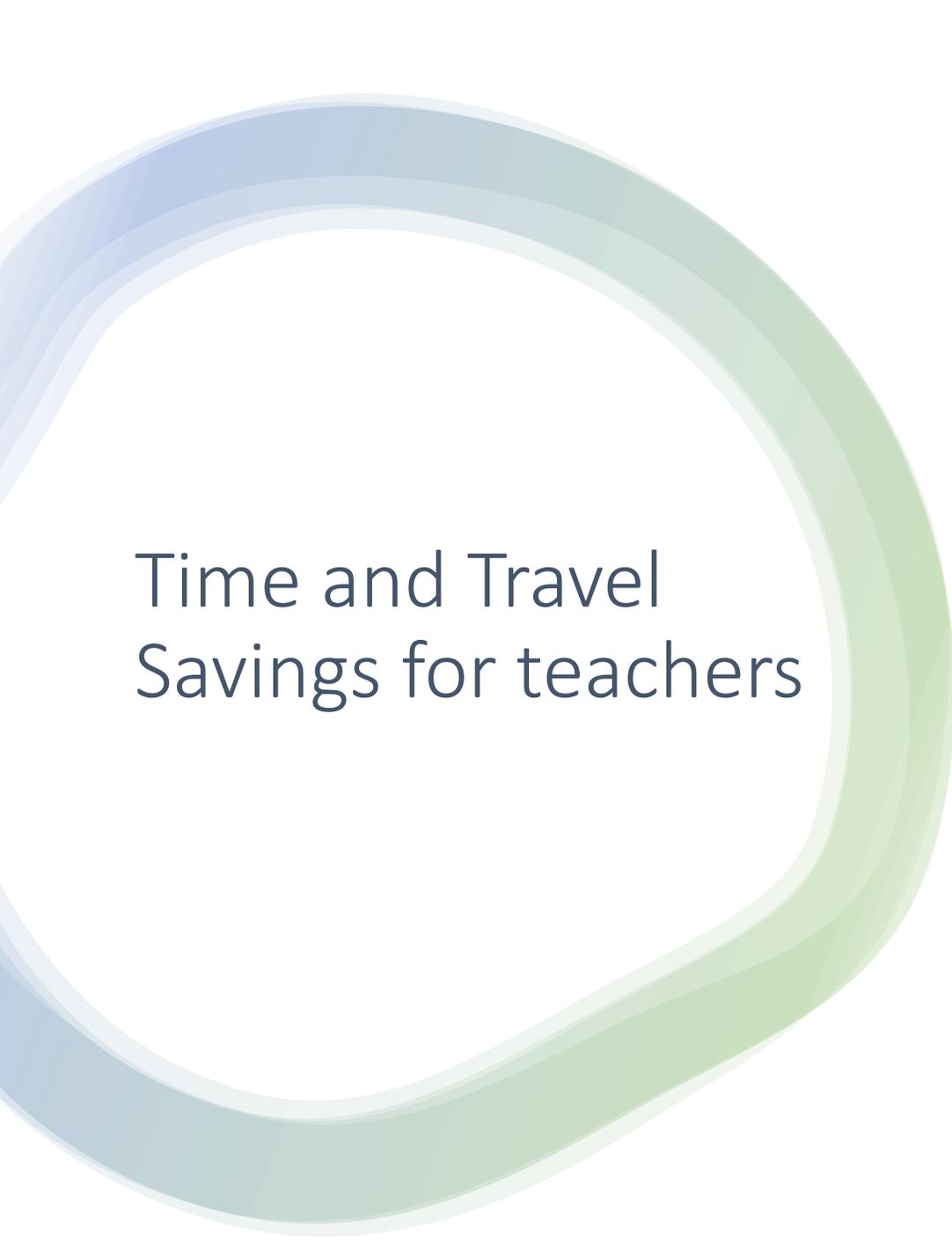
Time and Travel Savings for teachers

- Contemporary life requires complex balance between study, work and family commitments
- Travelling large distances is both a burden on finances and time (Ashton & Elliott, 2007)
  - most significant for rural teachers, increasing access and upskilling of dispersed workforces
- Disincentive to engage in professional development (Goos et al., 2020).
- COVID-19 has demonstrated that travel may become impossible for sustained periods.
- Reducing costs can also have a beneficial effect on the quality and duration of a TPD experience
- Online components can extend teachers' engagement in a TPD programme
  - Important where follow up impossible before (Seraphin et al., 2013)

Communication, collaboration and community

- Research shows that effective professional development "provides on-going support to teachers as they seek to implement new ideas in their classrooms" (Anderson et al., 2018, p. 3)

- Online engagement often designed to create a sense of community but face-to-face facilitates or enriches online interactions (Evans, Yip, Chan, Armatas, & Tse, 2020)

- Studying with known colleagues preferred and enables different kinds of peer support (Philipsen et al., 2019).
    - Can compensate for poor infrastructure impeding online engagement
    - Can mitigate shortcomings of online environments to create trust between participants
    - Add value through "advanced interactive experiences" (Mironov et al., 2014, p. 228)

Learning Design is critical …

- For both face-to-face and online elements
- Many authors provide rich detail for online but not face-to-face
- Assumption that we understand traditional methods?
- But how do they add value to online?

Some exemplar designs ...

Technology Integrated into a Face-to-Face Course

Robertson (2008)
Using a wiki for co-constructing a training plan – teachers saw benefits to using the technology in their own teaching

8 weeks face-to-face lectures and tutorials → assessment

5 weeks problem-based small group activity comprising: → 1 week induction to wiki in class → 4 weeks face-to-face planning meetings → post-class online contributions to wiki
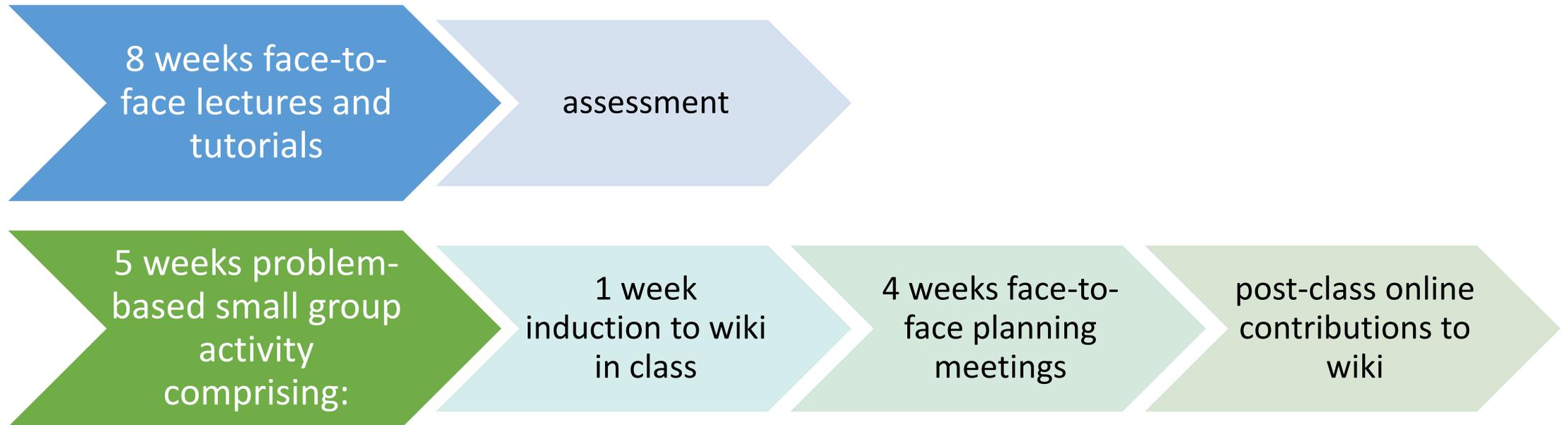
Online Discussion for Knowledge Construction: Required but not Prescribed

Nami, Marandi, & Sotoudehnama (2018) – technology used in f2f part, achieved engagement online

Face-to-Face → Computer Lab → Face-to-Face

Ongoing participation in online discussion list
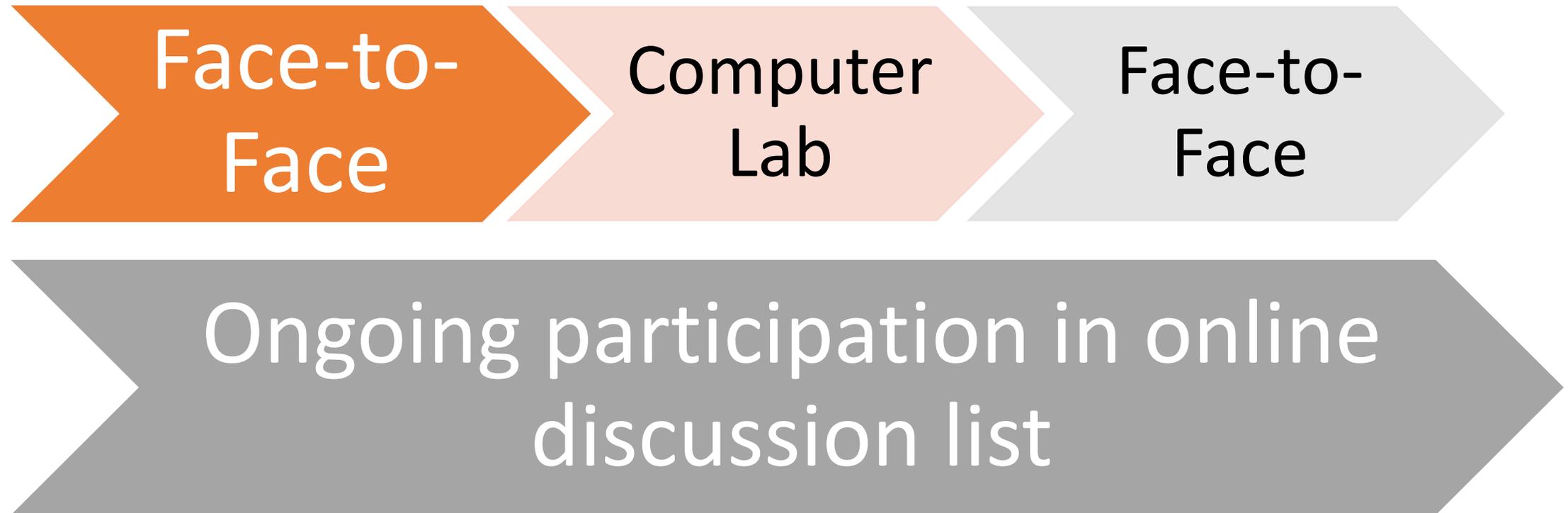
Discussion in Dual Mode

Ho et al. (2016) - co-designed materials – learnt from peer discussion – when compared to traditional mode, f2f could produce greater self-efficacy –> lessons for how the f2f part could be used e.g. for practical activities

| Online self-paced learning | Tutor facilitated discussion forum activities | Face-to-face discussion & peer reviewed presentations | Reflective assignment posted online | Online test |

ongoing online peer discussion

Teachers as Co-designers

Papanikolaou, Makri, & Roussos (2017) – redesigned for increased online engagement – reduced expectations for online activities during face-to-face workshops

Face-to-face workshops

Small group collaborative design challenges via online discussion forum (visible to whole group)

Online platform exploration
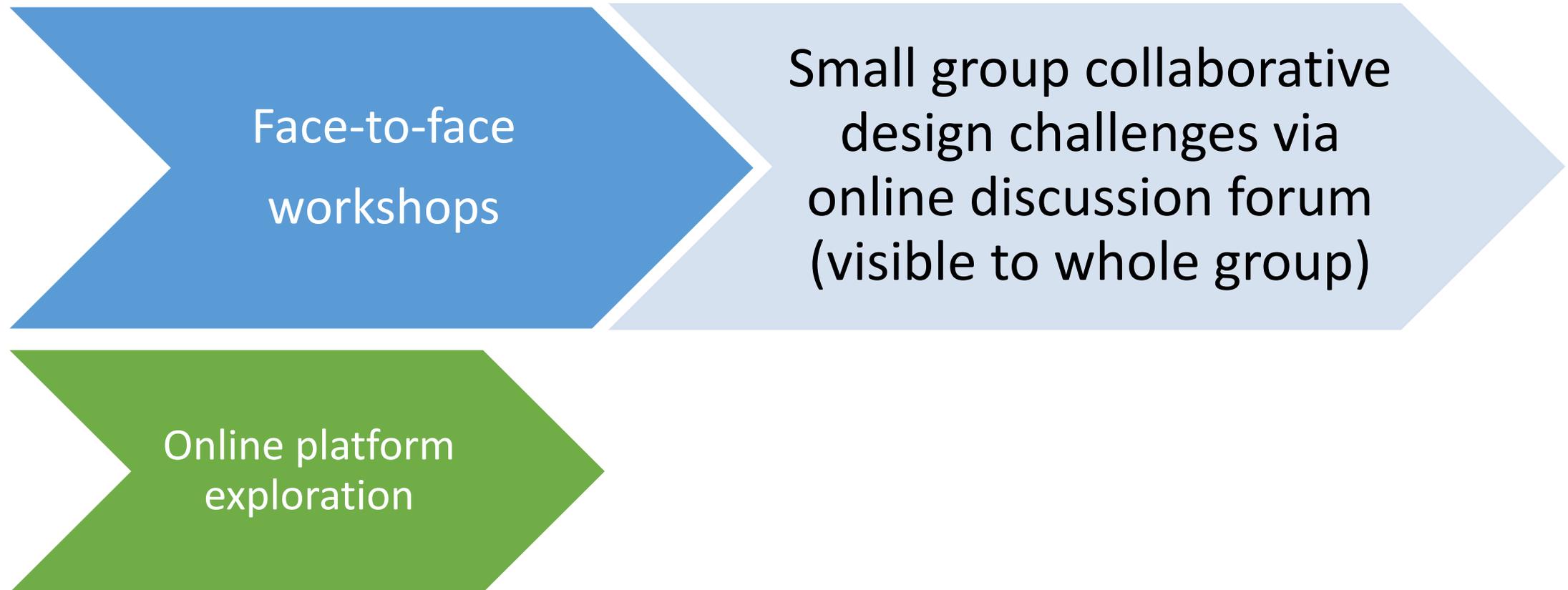
Lessons learnt

- Face-to-face sessions can provide
  - Introduction to activities
  - Technical support
  - Hands-on practice environment to implement ideas
  - Peer discussion and community
- Online sessions can provide
  - Engagement with content
  - Peer and automated assessments
  - Collaborative knowledge building
  - Peer discussion and community
- Tension between structure vs informality – do not overly prescribe online activities

The Promise of Blended MOOCs

- MOOCs can provide high-quality online TPD at scale
  - But MOOCs are not all the same!

- Engagement is not the same as a formal university course
  - No high-stakes assessment
  - Intention may not be to complete
  - Requires high self-regulation

- Blending MOOCs can provide
  - Social learning (e.g. for content-led MOOCs)
  - Extended engagement (e.g. more discussion)
  - Teacher explanation and feedback
  - Application of ideas to local context

Integrating MOOCs with face-to-face elements

- A MOOC that is unlinked to a particular course but is always available to the students describes a low level of integration, despite of including resources related with on-campus courses topics. A MOOC that is used by professors as a complementary resource for the course describes a medium level of integration. A high level of integration implies that professors organize their classes around the MOOC, which is used as the main reference of the course (Pérez-Sanagustín et al., 2015, p. 7).
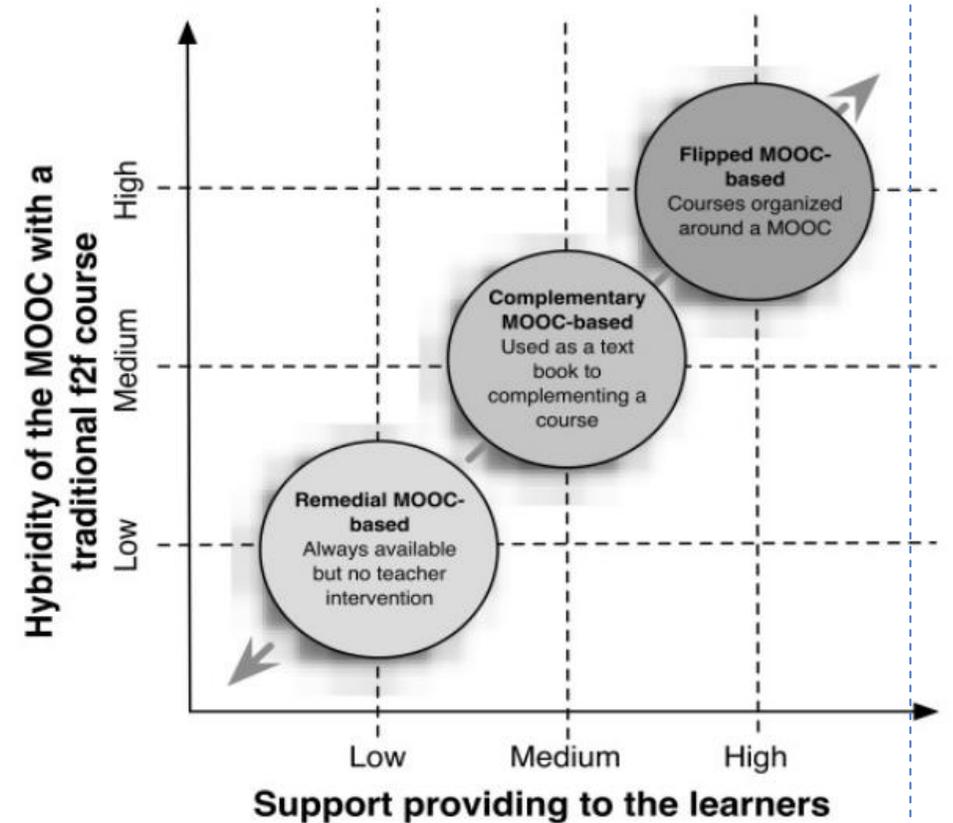

Fig. 1. MOOC-based hybrid Pedagogies framework

How to blend a MOOC

- "Wrapper" approach (i.e. wrapped around a face-to-face course) (Bruff et al. 2013)
- Students invited to engage with MOOC, face-to-face classes spent discussing research articles Students asked for more time in class discussing MOOC
  - Did not engage in online discussion, but learnt from reading it
  - Challenges of getting blend and scheduling of MOOC right
  - Degree of synchronisation face-to-face/MOOC is important (Holotescu et al., 2014)

H-MOOC framework

Pérez-Sanagustín, Hilliger, Alario-Hoyos, Kloos, & Rayyan (2017)

Alignment

The MOOC replaces traditional course

The MOOC is wrapped around the MOOC

MOOC provides additional support

The MOOC is optional extra but with tuition available

Institutional support
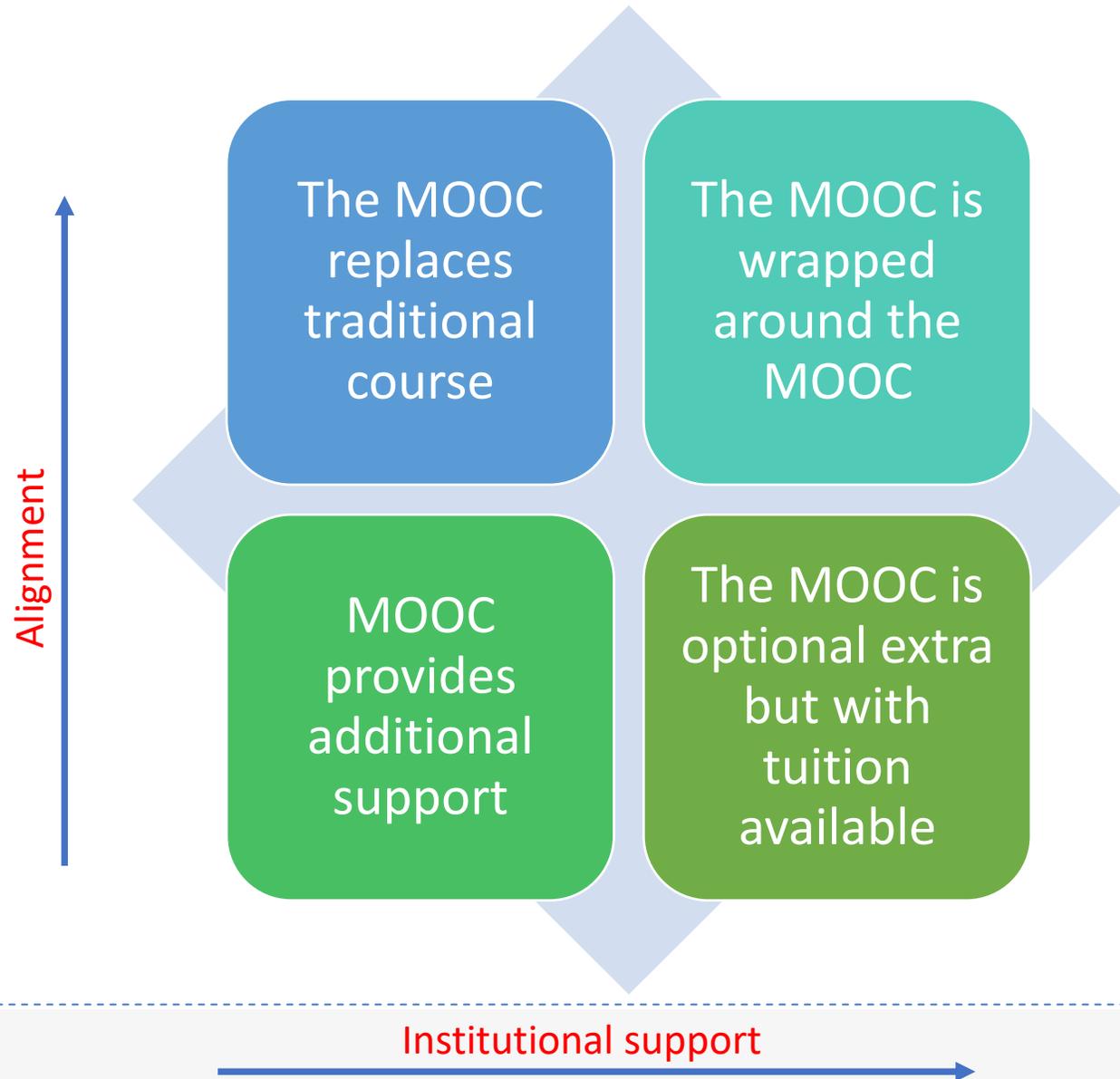
Blended TPD MOOC to achieve nationwide change

- Need for all teachers to gain BA in teaching subject Gynther (2016)
  - Specially created restricted access online course
  - Multiple pathways
  - Tried to design "asynchronous teacher telepresence" into videos
  - Supplemented by face-to-face sessions but far from ideal experience for participants
  - Educators unfamiliar with MOOC concept and likely to reproduce online content rather than support students in more meaningful ways

Blended TPD MOOC for a small community

- Face-to-face support for 7 teachers in low resourced environments taking an existing MOOC (King, Luan, & Lopes, 2018)
  - Watched downloaded videos together and reflected together on applications to their context and practice
  - Teachers valued the online discussion for teaching tips
  - Technological challenges – could use face-to-face time to catch up
- Demonstrates that blends designed around existing MOOCs can provide high quality learning experiences for teachers

Co-designed Massive Open Online *Collaborations*

- Blended learning course was designed around a co-designed multi-stakeholder collaborative MOOC (Chase et al., 2019)
  - Blended learning residential 'summer school' simultaneous with MOOC
    - 3 x 2 day meetings before, during and after the MOOC
    - Support for lack of infrastructure, technical support
    - Presentations and discussions to supplement learning in the MOOC and achieve deeper engagement with challenging content
    - Practical work with digital tools for collaborative activities in the MOOC (e.g. Padlet, Mentimeter)
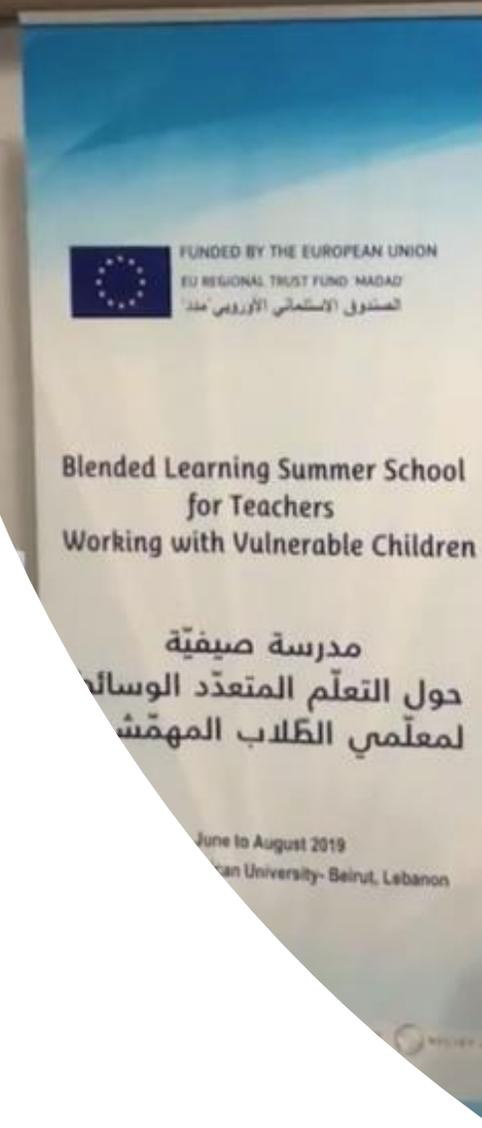
Blended MOOCs for TPD - insights

Blending specially created or existing TPD MOOCs is a viable proposition

The need to integrate MOOCs or other online courses into the face-to-face provision is fundamental

There are different ways of doing this, but this must be a thoughtful combination

Better value (money/time) in blending existing MOOCs

Co-design from the outset can be critical to ensure all stakeholders have ownership of the MOOC

not separate activities happening online and face-to-face

Conclusions

- Blended learning has long been considered a viable option for TPD:
    - flexibility
    - cost efficiencies
    - communication and community

- Teachers value shared local context and community

- But teachers also value global online community too

- Engagement in online activities can be enhanced by well-designed blended and online activities

- Design of blended learning implementations is complex and creative
    - Focus should be on both the face-to-face and online elements and the integration between them

- Future research would benefit practitioners if the designs being evaluated could be made explicit