INNOVATION: E-LEARNING

FOR TRIPLE-I DOCTORAL TRAINING

Online learning in Graduate Spirit: results of pressure cooker field labs

BACKGROUND

The corona crisis enforced the Graduate Spirit partners to transform their doctoral training, overnight, into an online learning programme. This had the advantage that traditional barriers having to do with teacher and student reticence were immediately overcome, that the motivation to work with digital technology was high, and that the collective desire to make online doctoral training work was overwhelming. The online doctoral modules can thus, in retrospect, be seen as pressure cooker field labs from which important future lessons for blended doctoral training can be drawn.

In this report we first discuss some general background information to the challenges and advantages of online learning. Then we zoom in on the lessons we have drawn from our network and their consequences for the design of future blended doctoral training.

1. GENERAL BACKGROUND

Online Learning is of ever-growing significance and importance in higher education. Before the corona-crisis, an important argument was that online learning makes it possible to teach and learn at great distance without much travelling involved for neither teacher, nor student. This is a significant benefit given the current challenges to the global climate. In the corona-lockdowns we witness across the globe, online learning is the only viable option to keep curricula going and enable teachers and students to work with each other. The research literature identifies a number of general advantages and disadvantages of Online Learning, as well as barriers to success. To date, these have not been made specific for doctoral training in the social sciences and humanities. We will therefore add to this literature on the basis of our recent experience with online teaching in the SPIRIT Grad Schools enforced by the Corona crisis.

1.1. Benefits

Apart from the practical benefits that have to do with bridging time and space, researchers have identified other, substantial and pedagogical advantages as well. Davies and Graff, for instance argue that 'online learning programmes promote **student-centred learning**, encourages **wider student participation**, and produces **more in-depth and reasoned discussions** than traditional face-to-face programmes (eg, Karayan & Crowe, 1997; Smith & Hardaker, 2000)' (2005: 657) while in his own work, Graff also comments on the **flexibility of online learning** as a potential benefit for the students as they can progress at their own pace as well as putting the responsibility for their learning directly in the student's hands (2003).

These benefits, however, are contingent on there being **a sense of an online learning community** and there is literature which focuses on this element as well as 'improving the quality of discussions compared with traditional face-to-face interactions' and 'widening student involvement' (Graff, 2005: 658). Davies and Graff's (2005) work therefore focused on the gap they felt existed regarding 'whether online interaction has any tangible benefits in terms of improving student learning' for which they concluded that there was no great evidence to suggest that online learning improved the grades of the students in their sample. Indeed, those who interacted more with the online tools did get better grades than those who did not, which supports the theory that 'hard work translates to better grades' (*ibid*: 661) rather than reflecting on the medium by which the lessons were taught. They also found that 'simply encouraging students to get more involved in online discussions is unlikely to automatically improve their performance' (*ibid*: 662) however they did acknowledge that further research in this area should look at the quality of such discussions, not merely the quantity.

1.2. Disadvantages

Muilenberg and Berge offer a more negative reflection of student responses to Online Learning by noting that although there is evidence from the work of Clark (1983) and Russell (1999) that the effectiveness of well-designed online learning has no significant difference to that of well-designed in person learning, many students still perceive their online experiences badly (2005: 29). Negative perceptions of online teaching can result in 'outcomes such as higher dropout rates, low motivation of students to learn, and lower student satisfaction with the learning experience' (*ibid*). As noted in their literature review, barriers towards a positive online learning experience can take the form of 'differences in learning, attitudes, motivation or experiences based on: gender […], age […], ethnicity […], ability and confidence with online learning technology […], the type of learning institution they attend […], learning effectiveness in the online environment […] or self-efficacy [as well as] learning enjoyment in the online classroom […], number of online courses completed […], number of online courses dropped […], [likelihood of taking a future online course […], and whether students experienced prejudicial treatment' (*ibid*: 30-1).

1.3. Barriers to success

Of these Muilenberg and Berge noted that the most critical barriers to successful online learning were a **lack of social interaction**, **administrative/instructor issues**, **learner motivation** and **time/support for studies which** were effected most significantly by the student's ability and **confidence with online learning technology**, effectiveness of online learning, online learning enjoyment, the number of online courses completed and the likelihood of taking future online courses (ibid: 38). For instance, those who had the greatest confidence with the technology required for online learning found that there were the fewest number of barriers to their success while those students who felt that they could not learn well online, did not (*ibid*). This latter barrier corresponded to whether or not the students in the sample had taken an online class, with those who had reporting their expected success as less of a barrier than those who had not (*ibid*). Similarly, those who enjoyed online learning reported less of a barrier than those who did not enjoy online learning when compared to traditional learning environment (*ibid*).

Another area of difficulty in online learning is **the change of pedagogy** required to adapt to the online environment. Considerations of this nature include, as Demir Kaymak and Horzum note, the theory of transactional distance is especially applicable to online learning because it encapsulates the 'psychological and communicative space which leads to potential misunderstandings between student and teacher behaviours; in other words it is not only a physical distance' (Moore & Kearsley, 2012 as quoted by Demir Kaymak & Horzum 2013: 1793). Specifically the balancing of structure and interaction where they found that the increase of one decreased the other. This means that there needs to be flexibility within the structure of a planned online teaching session in order to adapt to the students' needs as it is with increased interaction that the students' abilities 'to fulfil their individual learning needs also increases' (*ibid*: 1794).

Time to **master the relevant technology** is something which is reported as not just being a problem for the students, as discussed above, but for the educators as well with this issue documented in O'Doherty et al.'s work on introducing online learning in medical education (2018). Here it was noted that the more involved the educator was with the tool, the more practice they got which was crucial for the success of

Innovation e-learning: *Online learning in Graduate Spirit: results of pressure cooker field labs*

the program however such training requires time which was the number one barrier to using the new technologies (*ibid*). However it was noted that once adopted the digital tools freed up time for the educators which they could then use to 'learn concepts and reflect on practices' (*ibid*: 8). Another issue was the initial cost required to set up such systems although the report from Maloney et al. suggests that online programmes required less enrolments to break even than a traditional teaching course (*ibid*). An additional and key response was to the phenomenon of a critical and overwhelmed staff wary and **resistant to the change in teaching** (O'Doherty et al., 2018: 9) to which the solution presented was to foster a positive culture of support 'in the face of seemingly difficult to use and time consuming' tools (*ibid*).

2. SWITCHING TO ONLINE DOCTORAL TRAINING IN MARCH 2020

Prior to the Corona-crisis, the Graduate Spirit partners were already experimenting with online training and learning in their own schools. The reasons for this were:

- Offer a better service for doctoral candidates who cannot be on site because of fieldwork or international obligations;

- Making it possible to switch digital course material and discussions from one class to another;

- Enrich and expand the kind of course material beyond traditional written sources;

The main forms of online learning that were in use or being prepared were video lectures, digital workshop material and MOOCS, offering mostly a-synchronous modes of interaction with this material. All schools relied heavily on the e-learning facilities of their own universities, the quantity and quality of which varied across the partners. None of our partners had engaged in systematic evaluation of these online or blended formats.

2.1. Dimensions of the digital transition

For the SPIRIT Graduate Schools, their staff and doctoral candidates, the transition to digital applies to different elements:

- Meetings with supervisors of supervision teams

- Fieldwork

- Learning in doctoral training courses

- Participating in the doctoral community

- Pastoral care

- The final examination in a viva or public ceremony

Innovation e-learning: *Online learning in Graduate Spirit: results of pressure cooker field labs*

The Graduate Spirit team decided early on in the crisis to establish a LinkedIn community for the rapid dissemination and exchange of digital solutions to all these challenges, both for the partners and their wider networks (see for more hands-on detail Section 3 of this report).

2.2. Experiences with online doctoral training

All SPIRIT partners changed from offline to online teaching within a week. There were a number of common challenges encountered, in particular regarding:

- The choice of an appropriate platform;

- The quality of home connections of teachers and doctoral candidates;

- The pedagogical requirements for online teaching;

- The do's and don'ts of online interaction between teacher and doctoral candidates, and between candidates themselves;

- The timing and pacing of the course itself and its components;

- Appropriate software for testing and examining

As the social sciences and humanities are relatively independent of lab space and hands-on training, few of our partners reported a complete standstill of training as was seen, among others, in some of the medical sciences. Online teaching has become a cornerstone for our partners to keep in touch with their PhD-candidates and an urgent field for more innovations. As a result, some graduate schools in our network have now extended their online teaching at least until December 2020 or, in the case of the Erasmus Graduate School for Social Sciences and Humanities in Rotterdam, even to the entire academic year 2020-2021

3. LESSONS LEARNED

The quick transition to online teaching has enabled us to draw some important lessons for blended learning in graduate schools for social sciences and humanities: they pertain to mind-set, technologies, pedagogies and student interactions.

3.1. Mind-set

Although across the world all universities have transformed to online teaching, as did the partners in Graduate Spirit, the classic mind-set for high quality teaching remains based on face-to-face interactions between teachers and students. It is evident that this the model that has been in place for centuries and it will not easily be accommodated to a blended format in which face-to-face and digital interactions are combined. Nevertheless, the current crisis has shown that full-blown distance learning is relatively easy and this experience needs to be nurtured and mobilized to work towards blended formats that can be adjusted to various circumstances of crisis.

Innovation e-learning: *Online learning in Graduate Spirit: results of pressure cooker field labs*

3.2 Technologies

An important lesson regarding the available technologies for online teaching concerns the affordances of the platforms that are available. It is imperative to articulate those with the needs of the particular course or module. Most of our partners began with Zoom for their online courses, because of the participation and interaction facilities, and its user-friendliness. Some were then faced with directives from their universities to use other platforms, because of alleged security issues with Zoom. This is indicative for an important trade-off between institutional needs versus teacher/student needs, because some of the alternatives perform markedly less in terms of number of students visible on the screen, possibility to do group work, share screens etcetera. There has been a upsurge of websites where different platforms and their affordance are compared.

3.3. Pedagogies

The type of pedagogy needed for the appropriation of blended learning in graduate schools for the social sciences and humanities is contingent on the particular type of blending that is taking place. There have been many studies about the best ways to combine lecturing, participation, group work and assessment in fully digital and blended courses (e.g. McGee& Reis2012). These all depart from the assumption that the teacher and the student are in a workplace, rather than at home. The corona-situation of our Graduate Spirit members and their doctoral candidates entailed the balancing of home and family obligations with teaching duties, faltering connections and hardware, and general screen-fatigue due to the complete transition to digital. This required, among other things, more interactive formats, more regular breaks and additional communication channels to stay connected to the course.

3.4 Student interactions

Most doctoral candidates welcomed the opportunity to follow their courses online. This prevented a further delay of their studies but also offered the opportunity to engage with fellow candidates and teachers. While we did not organise dedicated evaluations, we did hear from various sides that the small-group, focused interactions in break out rooms were highly appreciated. Also, the way online teaching enforces a very structured mode of discussion or Q&A sessions was sometimes seen as an advantage over the more unruly interaction that sometimes take place in live classes, especially for the less outspoken and vocal candidates. Some new netiquette regarding muting and keeping camera images open was quickly established.

Innovation e-learning: *Online learning in Graduate Spirit: results of pressure cooker field labs*

4. PRACTICAL TIPS FOR THE DIGITAL CLASS ROOM

On the basis of these experiences we have compiled ten practical tips for the digital classroom.

1. Provide participating doctoral candidates with instructions **how to use the platform**. Don't assume this will be easy for everybody and allow for some time for everybody to get acquainted with it.

2. Establish **rules of engagement** regarding muting, video image, asking for attention, staying online and having a back-up mechanism. Tell the participants you want them to use Speaker View when you're sharing or presenting and Gallery view during discussions.

3. Keep the course itself and its elements **short**. Three hours will be the maximum span of attention, provided that there is a wide diversity of activities during these hours.

4. Use **different online facilities** and additional software to enhance student participation and engagement: think of screen sharing, break out rooms, chat-room, visual collaboration and brainstorm software.

5. An online lecture should not last longer than 30 minutes and should be accompanied by **visual material**. Design this material especially for the online situation (e.g. make sure the slides are readable on small screens; use 'appear' for the bullet points, etcetera.

6. Make sure to **address students directly** and individually to enhance discussion; a spontaneous flow is unlikely to emerge.

7. Check regularly if students are still engaged and 'with you' or if they need another approach or a break.

8. **Look into the camera of your PC or laptop**, rather than at the images of students on your screen; this enhances a personal connection.

9. Make sure you are in front of a **neutral background**; for this kind of academic situation a book case is fine.

10. Before closing the session, **ask for feedback** and what students would like differently in the next class. Continuously check and adopt to your student needs.

.

Innovation e-learning: *Online learning in Graduate Spirit: results of pressure cooker field labs*

REFERENCES

Bediang G, Stoll B, Geissbuhler A, Klohn A, Stuckelberger A, Nko'o S, et al. Computer literacy and e-learning perception in Cameroon: the case of Yaounde Faculty of Medicine and Biomedical Sciences. BMC Med Edu. 2013;13(57):1–8. As quoted by O'Doherty, D., Dromey, M., Lougheed, J., Hannigan, A., Last, J. & McGrath, D. (2018). Barriers and solutions to online learning in medical education – an integrative review. *BMC Medical Education.* 18(130). 1-11. DOI: 10.1186/s12909-018-1240-0

Clark, R. E. (1983, Winter). Reconsidering research on learning from media. Review of Educational Research, 53(4), 445–459 as quoted by Lin Y. Muilenburg & Zane L. Berge (2005) Student barriers to online learning: A factor analytic study, Distance Education, 26:1, 29-48, DOI: 10.1080/01587910500081269

Davies, J & Graff, M. (2005) Performance in e-learning: online participation and student grades. *British Journal of Educational Technology* 36(4). 657-663. DOI: 10.1111/j.1467-8535.2005.00542.x

Demir Kaymak, Z & Horzum, M. B. (2013) Relationship between Online Learning Readiness and Structure and Interaction of Online Learning Studies. *Educational Sciences: Theory & Practice*. 13(3). 1792-1797. DOI: 10.12738/estp.2013.3.1580

Graff, M. (2005) Cognitive Style and Attitudes towards Using Online Learning and Assessment Methods. *Electronic Journal of e-Learning*. 1(1). 21-28.

Lin Y. Muilenburg & Zane L. Berge (2005) Student barriers to online learning: A factor analytic study, Distance Education, 26:1, 29-48, DOI: 10.1080/01587910500081269

Maloney S, Haas R, Keating J, Molloy E, Jolly B, Sims J. Breakeven, cost benefit, cost effectiveness, and willingness to pay for web-based versus face-to-face education delivery for health professionals. J Med Internet Res. 2012;14(2):e47. As quoted by O'Doherty, D., Dromey, M., Lougheed, J., Hannigan, A., Last, J. & McGrath, D. (2018). Barriers and solutions to online learning in medical education – an intergrative review. *BMC Medical Education.* 18(130). 1-11. DOI: 10.1186/s12909-018-1240-0

McGee, P., & Reis, A. (2012). Blended course design: A synthesis of best practices. *Journal of Asynchronous Learning Networks*, *16*(4), 7-22.

O'Doherty, D., Dromey, M., Lougheed, J., Hannigan, A., Last, J. & McGrath, D. (2018). Barriers and solutions to online learning in medical education – an intergrative review. *BMC Medical Education.* 18(130). 1-11. DOI: 10.1186/s12909-018-1240-0

Russell, T. L. (1999). The "no significant difference phenomenon." Raleigh: North Carolina State University. Retrieved September 30, 2004, from: http://nt.media.hku.hk/no_sig_diff/phenom1.html as quoted by Lin Y. Muilenburg & Zane L. Berge (2005) Student barriers to online learning: A factor analytic study, Distance Education, 26:1, 29-48, DOI: 10.1080/01587910500081269

Innovation e-learning: *Online learning in Graduate Spirit: results of pressure cooker field labs*