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MODALITIES, CHALLENGES, OPPORTUNITIES AND PROSPECTS
Exploring the impact of student teachers' online collaborative peer reflection

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Résumé

Cet article rend compte d’un projet de micro-enseignement facilité par la technologie, développé en réponse rapide aux situations imprévisibles dans le secteur d’enseignement public en raison des restrictions Covid-19 en ce qui concerne l’enseignement en personne. Le projet avait l’intention d’aider les professeurs stagiaires à développer leurs compétences en matière de réaction, de réflexion et de collaboration en leur offrant des occasions de regarder des épisodes courts d’enseignement avant d’offrir une évaluation formative par les pairs. Le micro-enseignement, une activité dans laquelle les professeurs stagiaires planifient, enseignent et réfléchissent à des cours courts, ou à des parties de cours, est souvent utilisé dans la formation des professeurs comme un mécanisme pour aider la préparation et la réflexion, mais généralement il se présente en personne. La réflexion est largement reconnue comme une compétence clé que les professeurs stagiaires doivent se développer dans le cadre de leur formation pédagogique.

Les professeurs stagiaires ont été interrogés avant et après leurs participation dans le projet. Les réponses à l’enquête ainsi que les avantages et les défis identifiés pour aider le développement des compétences pédagogiques, y compris la réflexion par les pairs, sont explorés dans un environnement d’apprentissage à distance en ligne. Les résultats suggèrent que les professeurs stagiaires ont amélioré leur réflexions et leur confiances en l’évaluation par les pairs. La connaissance la plus importante de l’activité de micro-enseignement a été la nature collaborative du projet, en particulier la réflexion avec les autres professeurs stagiaires et la connaissance des autres établissements scolaires.

Abstract

This paper reports on a technology-facilitated micro-teach project, developed as a contingency response to unpredictable situations in schools as a result of Covid-19 restrictions to face-to-face teaching. The project aimed to support student teachers in developing their feedback, reflection and collaborative skills by providing opportunities to view short teaching episodes before offering peer-formative assessment. Micro-teaching, an activity in which student teachers plan, teach and reflect on small lessons, or parts of lessons, is often used in teacher education as a mechanism to support planning and reflection, yet it typically occurs face-to-face. Reflection is widely recognised as a key skill that student teachers need to develop as part of their teacher education.
Participating student teachers were surveyed before and after the project. The survey responses and identified benefits and challenges on supporting the development of pedagogic skills, including peer reflection, in an online distance learning environment are explored. The findings suggest that student teachers improved their reflection and confidence in peer assessment. The most important learning to emerge from the micro-teach activity was the collaborative cross-phase nature of the project, particularly the reflecting with, and learning from, others.

**Keywords**
Reflection; Micro-teaching; Student teacher; Teacher Education; Teaching practice; Video technology

**Introduction**
Use of video technology to facilitate professional development in Initial Teacher Education (ITE) has become an increasingly established practice over the past two decades (Gaudin & Chaliès, 2015; Danielowich, 2014). As a flexible tool, its uses are varied and include supporting critical-reflection and evaluation (Xiao & Tobin, 2018; Harford, MacRuaire & McCartan, 2010); facilitating feedback (Önal, 2019; Jordan, 2012), and peer-to-peer professional dialogue and development (Falter & Barnes, 2020; Osipova et al, 2011). This project firstly explored how the use of video technology can support student teachers’ reflective micro-teaching experiences during the Covid-19 pandemic and its ensuing and varied restrictions. Secondly, it examined the effectiveness of the collaboration and peer assessment opportunities across the student cohort, as a means of further supporting the reflective micro-teaching practices.

The student cohort in question included both secondary and primary student teachers, studying a newly accredited PGCE (Postgraduate Certificate in Education) programme based in Wales. The programme commenced in October 2021 and offered two different pathways: a part-time route and a salaried endorsed route, to be completed over a two-year period. Developing ITE provision in Wales was part of wider Welsh Government reforms to education (Welsh Government, 2020; 2017; 2014; OECD, 2014). The accreditation of a distance-learning route within the OU in Wales, intended to offer prospective student teachers a more flexible route into teaching, aiming to support further workforce diversity (Welsh Government, 2018; Furlong, 2015). The research discussed here involved 37 student teachers at the pre-test stage and 17 at the post-test stage. In addition to including both secondary and primary student teachers, the project was tailored to provide bilingual participation as the PGCE programme in question enables student teachers to study through the medium of English or Welsh.

Reflection is recognised as a key skill for student teachers (Hagger et al, 2008). As within other professions, practice around reflection is often supported through Schön’s (1983) concepts of ‘reflection in action’ and ‘reflection on action’. Schön’s ideas are not without their critics (Ixer, 2010; Hobbs, 2007), and Finlay (2008) acknowledges that reflective practice is not always a straight-forward procedure. Nevertheless, Körkkö (2021), considers that promoting critical reflection within ITE and providing supporting processes can enhance professional learning. Such provision of methodologies and contexts to enable reflection in ITE programmes is also recognised by Mutton, Burn and Hagger (2008), but they emphasise the interplay between the reflective practice and its practical setting.
Covid-19 restrictions impacted a range of teaching and collaborating opportunities available to student teachers. In light of this backdrop, further opportunities for developing this programme’s student teachers’ understanding of pedagogy, reflection, and their insight into different school contexts needed to be identified. As a result, a micro-teach activity was arranged to enable student teachers to share practice and work in cross-phase groups to collectively reflect on short teaching episodes using video technology. The micro-teach activity was designed to be peer-led and involved student-teachers working in small groups to plan a collaborative lesson, filming an individual ‘rehearsal’ or micro-teach of a section of the lesson, before sharing and evaluating each other’s video clips. Student teachers could then reflect and respond to the peer feedback before re-recording their micro-teaching episode. Finally, peer-groups prepared a summary of their experiences to share with the wider cohort, highlighting benefits to their practice and the challenges and limitations they encountered. All student discussions were scaffolded with guidance materials which included critical reflection prompts to scaffold the professional dialogue.

Literature

With video technology becoming increasingly accessible, affordable and collaborative it is not surprising that its use in teacher development has been widely applied and researched. In a review of studies involving the use of video viewing as part of teacher education or teacher professional development, Gaudin and Chaliès (2015) identify that using video enhances selective attention and supports the development of more focused and specific analysis. In particular, the use of video technology to view either one’s own practice or the practice of peers can facilitate critical reflection and self-evaluation (Harford, MacRuairc & McCartan, 2010; Osipova et al, 2011). Recent studies further corroborate this evidence (Körkkö, 2021; Deneme, 2020). For example, a Turkish study involving micro-teaching and video reflection with peers found the most popular benefit expressed by student-teachers was that the experience provided opportunity for feedback and self-evaluation (Deneme, 2020). Video technology can provide flexibility in terms of timing and location of feedback and can free users of time and space restrictions (Jordan, 2012). Gaudin and Chaliès (2015) summarise research evidence on video viewing in relation to the types of video being watched. Two categories are pertinent to this study; the viewing of oneself teaching and the viewing of peer teaching, with the studies typically combining both aspects.

In exploring reactions to viewing oneself teaching, some discuss the initial feelings of reluctance, discomfort or anxiety by participants, yet all found participants valued the opportunity to observe themselves teach (Downey, 2008; Körkkö, 2021; Xiao & Tobin, 2018). A key benefit for those viewing their own practice on video is that they can learn to identify areas in their practice for improvement (Borko et al, 2008; Downey, 2008). Viewing oneself on video can support increased attention to words and actions, both during the recording and afterwards (Charteris & Smardon, 2013). Xiao and Tobin (2018) argue that self-reflection with video technology, and a focus on specific aspects of teaching, can enable consideration of embodied dimensions of teaching (e.g. gesture, body language, positioning and gaze).

Video technology also supports peer reflection as participants can share, view and review teaching more easily (Deneme, 2020; Harford, MacRuairc & McCartan, 2010; Jordan, 2012). Peer reflection supports a social constructivist approach (Christ, Arya & Ming Chiu, 2014; Falter & Barnes, 2020) as feedback, reflections and solutions can be socially constructed. Furthermore, it is suggested that reviewing the practice of others supports the development of self-reflection (Charteris & Smardon, 2013; Osipova et al, 2011). Borko et al (2008) found
teachers valued viewing the teaching of their peers as they not only self-reflected and recognised similar problems but also gained ideas or different perspectives about alternative approaches. Danielowich (2014) sees this as diversification and expansion of reflective thinking. It seems peer reflection using video technology can also impact on the quality of feedback; Önal (2019) claims that video technology directs and focuses student teacher feedback to peers.

It should be recognised that involvement in peer reflection with video technology can induce a range of emotions; Falter and Barnes (2020) note that a move from self to peer reflection with video technology can induce emotions such as fear. Awareness of how a video of oneself teaching might be used may directly affect the teaching; Xiao and Tobin (2018, p. 341) suggest that with some preservice teachers the awareness of being recorded for later discussion might provoke anxiety about their appearance as a teacher leading to possible ‘artificiality’ in their performance. It should be noted that in their study supervisors were also involved in the subsequent lesson viewing and discussion and thus the implications of those viewing teaching videos should be carefully considered.

Taking into account emotions of video-assisted peer reflection, van Es (2012) discusses the importance of considering the learning community when peers share videos of themselves teaching; group norms must be established to ensure trust and sensitivity, whilst also trying to ensure participants engage in meaningful reflection and analysis of teaching. They argue that reflection and analysis are likely to improve over time as the group develop a sense of trust, sensitivity and understanding. Falter and Barnes (2020) argue the importance of considering student teachers’ ‘comfort zones’ when using video assisted peer reflection, with group dynamics and cohesion being important factors. They suggest that group rapport may be affected by aspects such as cultural and social backgrounds, though also acknowledge that ‘comfort zones’ may evolve, and group rapport may take time to establish.

What seems less clear in the use of video-supported peer reflection is the actual impact on teaching. The social constructivist approach used in video-supported peer reflection can mirror problem-based, experiential or inquiry-based learning, thus encouraging such approaches in practice whilst peer collaboration can induce a greater commitment to implementing changes in practice (Christ, Arya & Ming Chiu, 2014). Furthermore, Gröschner et al (2018) suggest a consequence of focused and systematic group video reflection is improved teacher self-efficacy, which is likely to impact on classroom practice.

Video technology can certainly support teacher development in areas such as reflection; its use can enhance recall and focus, and can promote shared analysis and discussion. However, the technology itself is the facilitator rather than the cause of such impact. Importantly, it is the construction of a supportive learning space that facilitates development, with the identification of shared focus in which reflection and pedagogy can be socially explored and developed (Christ, Arya & Ming Chiu, 2014; Falter & Barnes, 2020).

**Methodology**

A pre-test/post-test research design was adopted. The micro-teach activity is the delivered intervention and the evaluation discussed here intended to explore the activity’s impact on participants (Salkind, 2010). The student teachers were allocated into small groups and each group decided on the pedagogic area to focus on for the planning of their proposed lesson activities. These were selected from; i). developing pupil talk, ii). developing learners’ digital competence, iii). supporting group work or iv). Assessment for Learning. The student teachers used online platforms to meet over a period of five weeks.
Once the student teachers decided their particular area for focus each group member planned a teaching resource or activity. During their group meetings they presented their ideas to their peers and would, if they wished to, amend as appropriate to improve their resource/activity according to the feedback they received. Once individual group members had delivered their activity in their practice setting they reflected on this with their peers again. Video technology was used to record the rehearsal of the activity, their final presentation and their short individual reflections of the whole process and experience.

The pre-test survey was completed before the student teachers participated in any of the activity and the post-test survey completed after their final group meeting. These anonymous surveys collected data on participants’ confidence in regard to how effective they found reflection for their teaching practice and their confidence in their use of video technology for this aspect of their teacher training. The frequency with which they used oral rehearsal and the more popular approaches student teachers used to facilitate their reflections were also collected. All student teachers who participated in the group activity were invited to participate in the research element of the project. Thirty-seven student teachers completed the pre-activity survey and seventeen submitted survey responses after the completion of the activity. There were 124 student teachers on the programme at the time.

**Discussion of findings**

The following discussion is based on 37 responses to the pre-test survey (three Welsh Medium, 34 English Medium / 25 primary and 12 secondary student teachers) and 17 responses to the post-test survey (one Welsh Medium, 16 English Medium / 10 primary and 17 secondary student teachers).

Before participating in the micro-teach activity the 37 respondents reported limited experience of peer reflection; 64.8% had never experienced peer reflection in their previous degree study. Although the participants had noted the importance of being able to discuss and reflect their teaching with others, their responses commented that these experiences were predominantly with their school mentors and university tutors. However, they valued the opportunity of being able to share with their peers on the programme. Before participating in the activity the student teachers reported that the most important benefits of participating in peer observation were:

- It gives me a different perspective on my own work (76.5%)
- Formulating the feedback for peers helps me reflect on my own work (38.2%)
- I learn from seeing other students' work (32.4%)
- There is opportunity to collaborate with the rest of the group (29.4%)

All participants agreed that reflecting on their practice improved their teaching. However, around 40% had never recorded their lessons before. Therefore the opportunity to use the technology (recording of video and audio) to reflect would be undertaken for the first time in this micro-teach activity.

After completing the activity 93.8% of the participants reported that they had found the process of giving feedback to their peers useful. This supports others’ findings (Deneme, 2020; Harford, MacRuairc & McCartan, 2010; Jordan, 2012). Some individual responses included thoughts on how the student teachers were able to reflect and improve their own teaching and focus on what aspects were effective:
‘It made me really think about what they were doing and how effective it was and made me consider ways to change it.’

‘It allowed us to collaboratively work together and view different opinions on teaching.’

This suggests that collaborative skills were being developed, which is interesting given that the micro-teaching groups consisted of both primary and secondary phase student teachers. This is echoed in the second comment around viewing ‘different opinions on teaching’, suggesting that different perspectives on teaching were providing rich discussion and feedback.

Just under half of the student teachers (43.8%) reported that the micro-teach activity had changed how they reflected on their teaching and had resulted in them trying different approaches in their practice. This could reflect the trusting relationship that developed between the peer group, which positively impacted reflection and analysis (Falter & Barnes, 2020; van Es, 2012). An interesting insight from a secondary perspective that encapsulated both the benefits and challenges of peer assessing across the secondary phase was:

‘It helped me to take a step back and look at myself through different eyes. I think I would benefit more from other secondary school teachers looking at what I was planning and teaching, and reflect on their styles of teaching. I also found it difficult to judge a subject that was very different to my own.’

Almost all participants (94%) stated that the process of reflection directly improved their teaching practice. For example one respondent commented:

‘It allows me to approach issues and misconceptions with a bank of knowledge to help me overcome it.’

The two most important benefits of video recording a lesson or part of a lesson identified were ‘to identify areas that need improvement’ (56%) and ‘to be able to identify the strengths of a lesson’ (18.8%). Figure 1 summarises the aspects of lessons that the student teachers reported to orally rehearse the most, modelling the activity was the most popular, followed by rehearsing the vocabulary to be used.

Figure 1: Aspects of lessons that are orally rehearsed by student teachers since completing the activity.
As shown in Figure 2, there were two areas that the student teachers reported much improvement in their confidence following the micro-teach activity. Confidence in their technical skills to use audio and video technology increased by 20%. There was also a significant increase in the proportion of student teachers who would now orally rehearse before teaching. This reiterates the findings of others, for instance, Gröschner et al. (2018) commented on the improved confidence to emerge from group video reflective activities on classroom practice.

Figure 2: The impact of the micro-teach activity on aspects of the student teachers’ confidence and practice.

The student teachers had suggested in their pre-test survey responses that classroom management, differentiation and engaging learners were the aspects of their teaching they wanted to work on. However, post-test responses shifted significantly to a desire to focus on assessment for learning strategies. This shows how the focus of student teachers’ development shifted from the more basic mechanics of teaching to have a more refined pupil focus and aspects of teaching.

The responses of the pre and post surveys strongly indicate that the most valuable opportunities the micro-teaching activity provided fell into the following four categories:

- To view teaching from a different perspective
- To learn from others
- To collaborate with others
- To reflect on practice

Conclusion

The micro-teach project aimed to support students’ ability to reflect on their teaching during the Covid-19 pandemic and to allow collaboration and peer assessment opportunities across the student cohort. This paper set out to report on the effectiveness of the project and the
impact on student’s reflective skills on their teaching. The pre-test/post-test research design allowed researchers to examine the impact of the project on participants. Almost all participants (93.8%) reported in the post-test survey that they found giving feedback to their peers was useful. Therefore, the micro-teach project could be considered successful as it enabled an outlet for students to be able to reflect on their own teaching and the teaching of their peers, to share ideas. This suggests that the micro-teach project was also an opportunity for collaboration. The students worked as a team to evaluate their teaching and provide feedback for the wider cohort. Such findings are supported by others who emphasise the potential of using video technology to promote shared analysis and discussion. The supportive learning space is the key facilitator for positively impacting reflection and development (Christ, Arya & Ming Chiu, 2014; Falter & Barnes, 2020).

There was a drop in the response rate to the post-test survey compared to the pre-test survey, only 17 students completed the post-test compared to 37 completions of the pre-test survey. From a cohort of 124 the final response rate is considerably low and it must be considered whether this affects the project’s overall findings. A further study of students in the second cohort of students on the programme, with a larger sample would allow for comparison to see if there is a trend and allow a further analysis of the benefit of the micro-teach programme.

The post-test responses suggest that students’ focus had shifted after taking part in the micro-teach activity, with a more refined pupil focus and consideration of aspects of teaching, where previously there was more focus on the mechanics of teaching. Therefore, the micro-teach project could be argued to have developed the students’ ability to consider different teaching approaches, learn from their peers and collaborate with them as well as reflect on their own teaching style. This conclusion illustrates the significance of creating a trusting environment to facilitate such collaborative practice (Falter & Barnes, 2020; van Es, 2012).

Prior to the project a few student teachers expressed emotions including fear about the thought of recording themselves and the recordings being viewed by their peers, echoing the initial negative feelings amongst participants in other projects (Downey, 2008; Körkkö, 2021; Xiao & Tobin, 2018). By acknowledging the benefits of the peer assessment, the students arguably overcame their fears and anxieties. This suggests that students benefitted from the opportunity to reflect and carry out peer assessment. However, possibly the most important benefit from the micro-teach activity was the cross-phase collaboration which had not been expected by the researchers. The research findings emphasise the value of video technology as a facilitation tool for self- and peer-reflection during ITE. A further project with a wider cohort would allow researchers to try to quantify the benefits further, and consider whether micro-teaching would be suitable for diverse participants.

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Bibliographie / References


