

John Paul Mynott

*University of Aberdeen **

E-mail: john.mynott@abdn.ac.uk

ORCID: 0000-0002-8714-6525

Katrina Foy

*University of Aberdeen **

E-mail: kfoy@abdn.ac.uk

ORCID: 0000-0002-1789-4536

Faye Hendry

*University of Aberdeen **

E-mail: faye.hendry@abdn.ac.uk

ORCID: 0000-0002-1470-9681

Lorna Stewart

*University of Aberdeen **

E-mail: lorna.stewart@abdn.ac.uk

ORCID: 0000-0003-2757-2693

Virtual Observations: A Situational Analysis of a Technological Response to Practicum Assessment During a Pandemic**

Summary

In response to the Covid-19 pandemic, virtual observations were introduced to assess student teachers, in a Scottish Initial Teacher Education (ITE) department. This research critically reflects on the usage of these virtual observations as they were deployed on a large scale to meet the emergency requirements of teacher education during a pandemic. Using Grounded Theory as a qualitative frame (Merriam & Tisdell, 2016), this research employs Clarke's (2005) situational analysis to provide insights into how effective virtual observations are in the assessment of teaching practicum. The research methods involved the collation of individual,

* King's College, Aberdeen AB24 3FX, United Kingdom

** The publication was financed by the University of Warsaw.

written, critical reflections from 17 Practicum Tutors who used video to assess student teacher competency. These pieces of reflective writing were then thematically analysed and the resulting coding used to identify commonalities and trends. The importance of the skilled observer, the value of visual information, and the use of supplementary information were significant themes that emerged through the analysis. Overall, the effectiveness of virtual observations is confirmed, but caveats on its use remain. These caveats sit alongside questions of how virtual observation might be used in the future. Exploring the use of virtual observations as an assessment tool, at scale, gives this paper a unique situation, and its analysis adds to the knowledge base for virtual observations and how they can be used within teacher education.

Keywords: video observation/virtual observation, teacher education, school practicum, pandemic

Introduction

The Coronavirus Pandemic (Covid-19) had a significant impact on Scottish education, including Initial Teacher Education (ITE). Schools closed to in-person teaching in March 2020, and pupils were educated online during the Summer Term. As pupils returned to schools, in-person, in August 2020, restrictions on who could visit schools continued and this meant that, for reasons of safety and practicality, the traditional approach of in-person observation visits of student teachers on placement required adaptation. Consequently, while student teachers were able to undertake their practicum placements in schools, innovation was necessary to ensure that the assessments on their practicum placements could be undertaken in the academic year 2020/21.

In-person observations would usually be undertaken by Practicum Tutors employed by the University, and these observations form part of the assessments needed to ensure that student teachers meet the Standard for Provisional Registration (SPR) with the General Teacher Council of Scotland (GTCS) (GTCS, 2012). Student teachers then move into a year of probation following satisfactory completion of their Initial Teacher Education programme. The assessed observation by the Practicum Tutor forms part of the requirement used to ensure that a student teacher is ready to move into their probationary year. As a result, seeing the student teacher teach is a key assessment opportunity. This meant that any innovative substitute for in-person observations would need to enable university tutors to see student teachers in practice, without infringing on the Covid-19 restrictions in place in schools.

For the University of Aberdeen's Initial Teacher Education department, virtual observations were trialed as a solution, as video recordings would enable university lecturers to observe and assess student teachers in practice without physically attending schools.

Literature Review

Johnson (2020) identifies that school placements (synonyms include: practicum, internships, school-experience, school-based practice/training) are one of the elements of ITE that is recognisable globally. In Scotland teacher education is led by higher education institutions and school placements are a mandatory part of the any initial teacher education course (Johnson, 2020; Scottish Parliament, 2017). While there is uniformity of student teachers undertaking school placements, the reasons for these placements are varied. Developing reflective practice (Mtika, 2011); preparing to teach pupils with diverse needs and backgrounds (Graham, MacDougall, Robson, & Mtika, 2019) and understanding broader responsibilities of members of the teacher community (Zeichner, 2010) are all examples of how school placements can develop student teachers. While student teachers can develop in different ways and placement experiences can vary (Johnson, 2020) an aspect that is consistent for all student teachers in Scotland is an assessment of their placement, against their teacher standards, by a Practicum Tutor.

Much previous research on the use of virtual observations focuses on video as a formative assessment tool for pre-service or in-service teachers (Hannafin, Shepherd, & Polly, 2010; Liang, 2015). However, little research has been conducted on the effectiveness of video observations as a summative assessment process in ITE. The few recent studies which do consider virtual observation as a summative assessment tool primarily discuss live streaming (Admiraal, Hoeksma, van de Kamp, & van Duin, 2011; Dyke, Harding, & Liddon, 2008; Mac Mahon, O'Grádaigh, & Ní Ghuidhir, 2019; O'Grádaigh, Connolly, Mac Mahon, Agnew, & Poole, 2021) as opposed to recording to a secure online platform, as this paper considers. Moreover, video observations had not been used in Scotland as a summative tool in ITE prior to Covid-19, nor does existing research consider its usage on this scale. The 2020/21 cohort of students from Aberdeen University on practicum and requiring in-practice observation, was over 500 students. As such, there were many unknowns,

from practical applications of virtual observation at scale, to permissions for recording and data-handling. The ITE department worked in collaboration with its partner Local Authorities (LAs), where student teachers were placed for practicums, to establish a Video Observation Protocol (Appendix A) that would enable video observation to be used in schools during the pandemic, in order to support the observation and assessment of student teachers. This protocol was a compromise around what was necessary: observing the student teacher teaching in practice, seeing their relationship with the class, and observing their decisions in practice. This had to be balanced against ensuring compliance with data protection of individuals and ensuring consent had been given for those who were featured in the videos. As a result of this compromise, it was agreed that only the student teachers would be filmed for the video observations with no pupils to be included in the recording. This is a key difference from much of the body of literature relating to video observation, in which pupils or students are often included in the recordings (Baeher, McCormack, & Kung, 2014; Dyke, Harding, & Liddon, 2008; Mitchell, Marsh, Hobson, & Sorensen, 2010), though issues around privacy have also been raised by other studies (Dyke et al., 2008; Liang, 2015; Mac Mahon et al., 2019; O'Grádaigh et al., 2021).

The distinctiveness of this version of video observation, the fact that it was undertaken in a Scottish context as a method of summative assessment, and the scale of the usage of video observation, are original contributions of this research. The analysis that follows will explore considerations of how, and to what extent, virtual observation can be used as an assessment aide in Initial Teacher Education.

Methodology

To explore the situation within our research, the research team sought the views of any Practicum Tutors who had undertaken video observations during the autumn of 2020. Following ethical approval, the researchers asked for informed consent and a written reflection. These written reflections responded to some prompt questions designed to encourage reflection (Galleta, 2013) about the virtual observation process. Tutors were under no obligation to reply, but 17 tutors provided written reflections that were considered in this research. All reflections offered were anonymised on receipt and only the

corresponding researcher was aware of the initial identities of each reflection. This was a decision taken to support anonymisation of the writers, but also to ensure that the research team were able to analyse the reflections based on the detail contained within them, rather than any wider interactions they had with individual tutors in their daily work within the Initial Teacher Education department. While this anonymisation also supported diminishing researcher bias, the research team were part of the implementation team responsible for the virtual observations and keen to review the results to consider potential future uses, beyond a pandemic response.

As the context, scale and version of video observation are unique, the research team considered it important not to pre-empt any emergent key themes or findings; as such, Grounded Theory was selected as the qualitative frame (Merriam & Tisdell, 2016). Using a situational analysis approach to grounded theory (Clarke, 2005; Clarke, Friese, & Washburn, 2018), the research team explored our unique situation – the need to respond to a pandemic – with an innovative/distinctive approach to observational assessment. It was important to consider this as a situation which by its very nature of observing student teachers involved complex relational, spatial, and temporal ecologies (Clarke et al., 2018). In this complexity, it was important to consider the data we collated as the ideas and theory evolved (Strübing, 2007). The iterative processes of our approach enabled us to memo and capture the inferences we make from our data and the situational mapping enabled us to consider the relationships between our emerging ideas. Figure 1 indicates the process we undertook to generate our situational analysis.

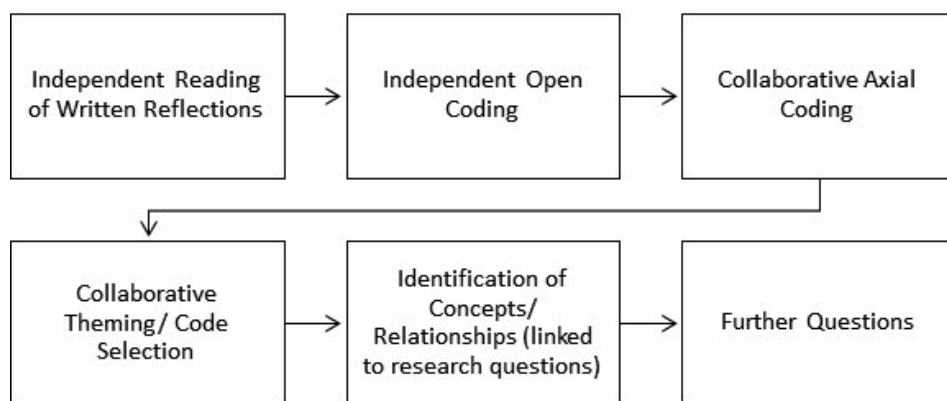


Figure 1. Process of coding analysis

The initial reading and coding of the written reflections was first undertaken individually by each researcher. The four researchers then met to compare and refine the codes collaboratively into axial codes (Kolb, 2012). Once the axial coding was completed, the research team collectively grouped these axial codes into broader themes. Each of the axial codes and therefore the themes had a positive and negative dimension. For example, a Practicum Tutor may have reflected that audio was essential to understanding the whole lesson (positive dimension) or buffering made the audio quality poor and the observation hard to follow (negative dimension). Identifying the dimensions enabled the research team to explore each code and any negative cases (Kolb, 2012) which contrasted with other findings. This in turn helped them validate the emerging findings from their coded analysis.

From these codes the research team collaboratively generated situational messy maps (Clarke, 2005; Clarke et al., 2018). Memoing was used throughout the process to record decision making (Birks, Chapman, & Francis, 2008). From these messy maps and memoing, the team was able to refine and align the axial codes to then explore them further through our ordered maps (Clarke et al., 2018). The initial messy maps were significant in the situational analysis as they enabled the research team to explore the prevalence of each axial code. Understanding the prevalence of each code through the discussion of the messy maps helped to further refine understanding of the participant responses.

Building on this understanding, the research team used Clarke's (2003) ordered maps to further explore the relationships between the codes. The discussion surrounding this helped to reveal, through memoing, the relational links (Clarke, 2003) which deepened the understanding of each code within each theme. Glaser (2004) suggests that memoing is straightforward, yet it is in this capture that significant relationships between the coded data can emerge. The team recorded their memoing and referred to this in their discussions around the data. As this was done, they noted how themes evolved. Each evolution involved further checking back to the original data sources to ensure all points could be supported by the initial Practicum Tutor reflections.

In line with the grounded theory approach taken, the discussions and memoing continued until the links and comparisons had been exhausted. At this point five themes emerged: Visuals; Time; Pedagogy; Effectiveness of Assessment and Future Uses. Each of the themes and their final map will be shared in the results section, with the Effectiveness of Assessment being addressed in the concluding sections of the paper.

Findings

The maps generated from the discussions, memoing and reflection on the participant data are included in the result section. This is to enable the reader the opportunity to see how diverse and coherent the different themes were. Positive and negative dimensions were identified for each theme and this section will describe the maps to reveal the key points that will be furthered in the discussion and conclusion. Some of these points are clearly identified in more than one map.

Visuals

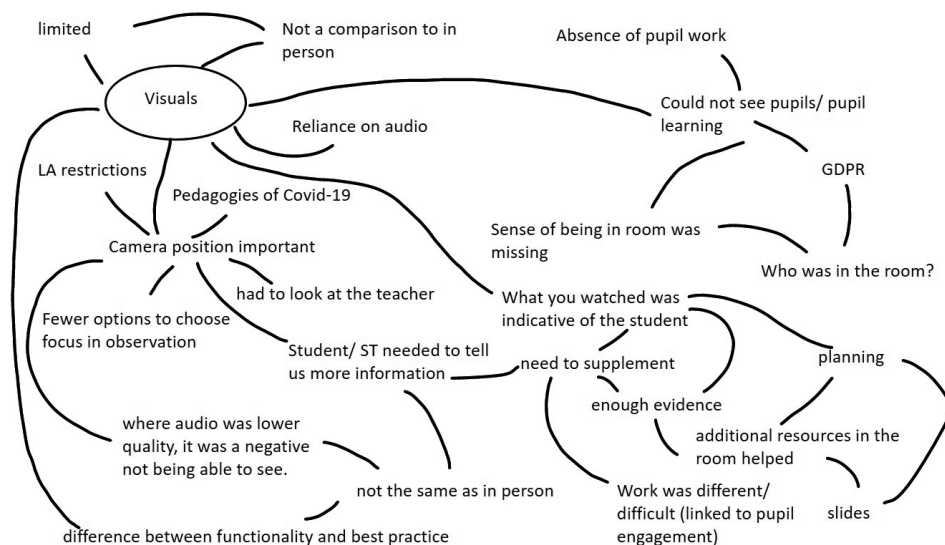


Figure 2. Map of theme: Visuals

The overall theme of this first section is the importance of visuals. Initially in the coding and memoing, the key ideas in this theme seemed to be related to audio. The initial impression and the initial codes gave examples of positive codes for audio being useful or problematic. This suggested that participating tutors were indicating that audio was particularly important to virtual observations and when audio quality was poorer, this impeded their ability to undertake their observation. However, as we explored the negative dimensions of the audio codes it became clear that the reliance on audio was not solely

indicative of the poorer audio quality, but was a response to the limitations of visuals, under the observation protocol used. The participants' articulation of the positive and negative codes for audio showed that there was an absence of information that the tutors would normally get from an in-person observation. Namely, that the tutor's viewpoint was restricted to the teacher and the front of the classroom. The negative dimensions in audio of buffering, poor sound quality or background noise impacting on the observer's ability to hear the lesson, showed that the tutors were reliant on audio to supplement the reduction of visual information, regularly available when observing in-person. Therefore, a transition in this theme took place as the ordered maps were generated, with the original theme of audio being replaced by visuals as the dominant theme linked to this set of codes.

The first of these was the importance of positioning the recording device. In the map this has multiple dimensions within the codes. The visibility of the teacher, the teaching and the whiteboard being used, alongside how much of the classroom audio could be heard, were important aspects for the observing tutors:

Tutor K: The camera positions used by the students varied. Most helpful were positions which enabled me to see the student and any presentation they had on the whiteboard.

Where there was poorer recording quality there were more negative codes:

Tutor H: The camera angle in some made it difficult particularly if a student was moving around the classroom. That then impacted on sound.

and more discussion of reliance on visuals and playback features:

Tutor C: The quality of some recordings left a lot to be desired.

Tutor L: Being able to pause and rewind the lesson to review certain aspects was particularly useful... at times when I didn't hear or fully digest what was said.

There was also a need to use supplementary information such as reflective conversations with the student and their in-practice, supporter teacher; documentation in the placement file; and/ or email correspondence, to broaden the information the observing tutor used to make their assessment:

Tutor L: The virtual observation process was particularly successful because of the other elements that fed into it – for example, reading student lesson plans before watching the video; reading student digital [practicum] files before watching the video...

Tutor G: *Alongside lesson plan evaluations and weekly review discussions with the student and Class Teacher, I felt I was able to make accurate assessments.*

Tutor J: *The emphasis on the post-lesson discussion is intensified in the [virtual] approach.*

Tutor H: *I feel quite confident that I was able to assess the students using [online platform] alongside the other evidence available.*

The need for supplementary information is echoed in the questions that emerged from the observing tutors' comments around a lack of clarity of who else was in the room, supporting or observing the observation. Were the audible pupil responses reflective of the wider classroom or not? While these queries were not only related to visuals, it was the limitation of visuals available, to the observing tutor, that drew these into question.

Time

The second theme was time. Time was a theme present from the initial codes, and one that evolved through situational analysis. Initially the themes for time were simplistic: did virtual observation save time? The positive and negative dimensions of this were explored. However, as the mapping of the axial codes took place a more nuanced perspective of time emerged.

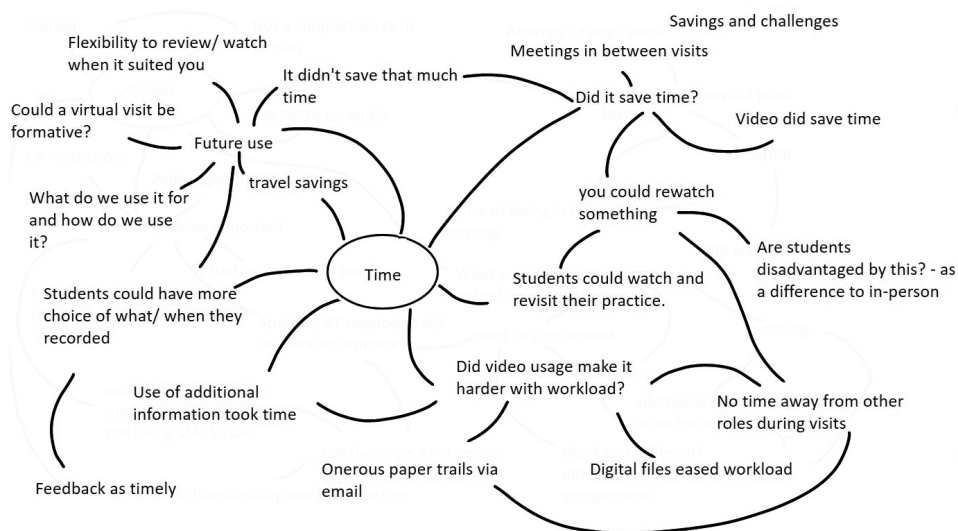


Figure 3. Map of theme: Time

As stated, there was the sense, in the initial codes, that virtual observation might save time. Positive coding around travel (e.g., from Tutors F and J) indicated that travelling time was reduced:

Tutor F: This system was efficient and time effective...and gave greater flexibility.

This discussion of reduction of travel correlates with findings of previous research (Bolton, 2010; Liang, 2015; Mac Mahon et al., 2019; O'Grádaigh et al., 2021). Tutors did not need to travel around the North-East of Scotland, and instead could watch their recordings on their computers and visit the student via video link to undertake the feedback conversation. Furthermore, the recordings could be viewed at a time which suited the tutors, which differs from the findings of previous studies in which live-streaming was used (Dyke et al., 2008; Hannafin et al., 2010; Mac Mahon et al., 2019; O'Grádaigh et al., 2021), affording even more flexibility.

On the other hand, negative coding around workload suggested that time saved in travel was consumed as virtual observations took additional time, due to the preparation of supplementary information. Onerous digital paper trails and the need to be in frequent communication with the student on placement were examples of this additional workload.

Tutor H: A few recordings were too long (well over an hour) and when the student hadn't highlighted which part to watch that meant having to view the whole recording.

Tutor C: Some students recorded absolutely everything lasting up to 1 hour and 20 minutes.

However, this coding was isolated and certainly not universal, appearing in three participating tutor reflections (C, A & H). The relational analysis of the ordered maps suggested that a wider aspect of this might be flexibility or perceived flexibility of time and workload.

The flexibility of time stemmed from some individuals placing value on them being able to decide on what work they did and when, organising this around their responsibilities and other commitments.

Tutor H: No need to travel and able to view several videos in one day.

Whereas others indicated that they were being asked to do more work than if they were conducting in-person observations when there would normally have been an easement of other meetings. Using virtual observation,

the dimensions of that fixed time are changed, so that recordings are more flexible.

Tutor F: *This system was efficient and time effective in that recording the lesson gave the students and the observers greater flexibility as there was not the need to match up school timetables with academic timetables.*

The observer can watch the recording at a time that suits them and their wider working patterns, and the student teacher is able to select a lesson that they would like to share with their tutor. However, it is noted in the analysis that this flexibility also could impact on the timeliness of feedback as recordings and observations might be undertaken over a period of days, as opposed to within a morning/afternoon allocated time slot for an in-person visit.

Pedagogy

The third theme relates to pedagogy and was a theme that emerged through situational analysis. In the initial coding this theme was identified as being tutor preferences towards specific pedagogy or the absence of pupil interactions being observed. Johnston (2020) problematises pedagogy within practicum placements as he discusses how students adapt to suit the school setting they are in.

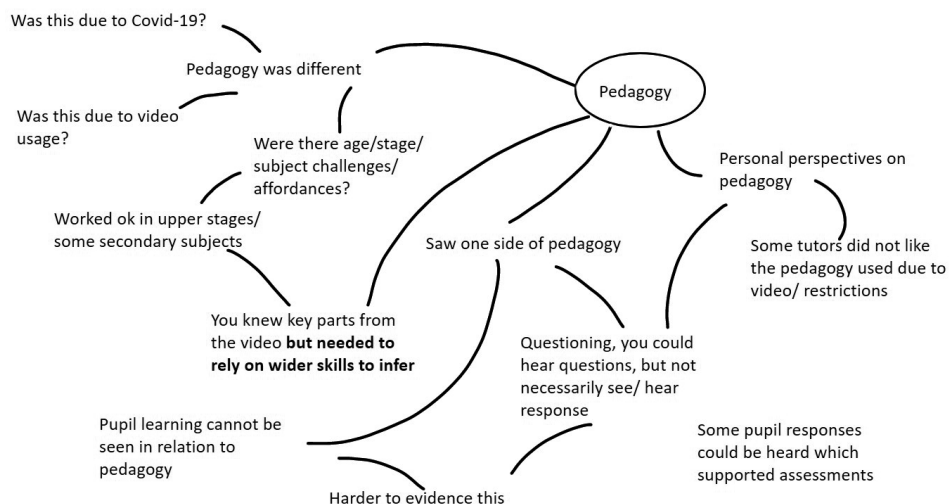


Figure 4. Map of theme: Pedagogy

During the coronavirus pandemic, pedagogical choices were more limited. Teaching was usually done from the front of the class and with little moving amongst the pupils. The changes were made to mitigate infection, but these changes would have been another difference between the Practicum Tutors' previous in-person observation and the virtual observations of 2020–21.

Exploration of this through discussion in the situational analysis indicated that these initial codes were related, and that there was a question about whether Covid-19 and/or the protocol of virtual observations had impacted on pedagogy of the way the student teachers were teaching in their observed sessions. The answer to this was not within the data set, but it was clear from the coding that pedagogy was important to the observing tutors. It is noted in 5 positive and 9 negative codes throughout the responses.

One of the prevalent aspects of these codes was in the negative responses which indicated the absence of the pupils in the recordings, making it harder to ascertain their responses, or involvement in the lesson. This notion of one-sided pedagogy emerged and indicates a limitation in the protocol that was used. Audio was useful in surmounting this absence to a degree, but supplementary information was required to fill in gaps around pupil responses to teaching, and around pupil behaviour, where this was not clear in the audio of the recording.

Tutor E: I found it very hard to gauge pupil engagement in learning, other than through guessing questions that were answered by the teacher. However, the video was able to capture a 'sense' of the classroom, aspects of the layout of desks, the pace and tone of the teacher.

Again, the need to see more than just the student teacher was apparent. If the Practicum Tutors had been able to see more, they would have had to infer less.

It was within the relational discussion that it became clearer that there was an element of the need for tutors to infer from the information and use their expertise and experience to bridge the differing information sources. How confident each individual tutor felt with this is explored in the fourth theme.

Future Uses

Building on the questions of the three themes discussed, the situational analysis presented a fourth theme of future uses. This theme was present in

initial codes, but these codes were isolated to specific participating tutors. Tutors D, E, F, G and M drew on the advantages, benefits, and potential of the virtual observations contextually. Therefore, while this is a pertinent theme, the results for this theme are validated by a smaller group of participating tutors and further exploration would be useful to consider the potential future uses of virtual observations. The three groups of codes within this theme indicate that there is potentially a role for virtual observations as a formative assessment tool, that it can support flexibility in saving time and travel, and that it needs to be considered in relation to student experience.

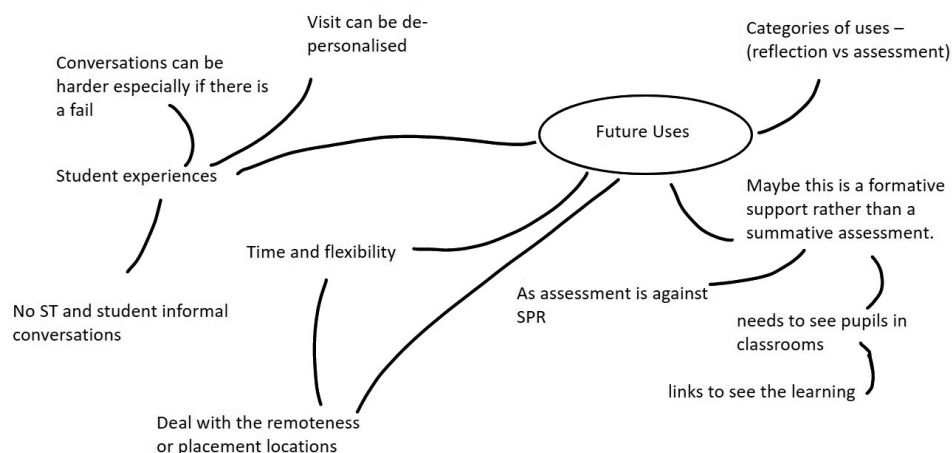


Figure 5. Map of theme: Future Uses

Tutor F: *When students are progressing well, we should consider the first assessment as being virtual to reduce workload.*

Tutor D: *I think there is an ongoing role for video in student teacher placements. Maybe this is more for the student teachers, or for us to work with them in a more formative way, but I think there is potential to help us work with students more when they are in placement through video.*

The potential of virtual observations as a formative tool links relationally to the confidence and preferences of the Practicum Tutors. Ideas exemplified by Tutor D and Tutor Q suggest that with adaptations there is certainly a future use both as an emergency response or as a formative tool that can be used to support student teachers in understanding their own teaching in greater depth:

Tutor Q: I would suggest this is one useful tool for student assessment, particularly in certain circumstance where students are in remote locations or the prevailing weather is causing disruption to visits.

This correlates with other research which recognises the value of virtual observations as a formative tool (Liang, 2015; Mac Mahon et al., 2019) and/or which suggests virtual observations might be used to supplement, rather than to replace, in-person visits (Bolton, 2010; Mac Mahon et al., 2019; O'Grádaigh et al., 2021). Therefore, the overall effectiveness of virtual observations is important to consider, and then the application of how virtual observations might offer additional options or advantages to traditional in-person visits needs to be considered.

Discussion

Building on the findings of each of the themes, the discussion will focus on the links between themes and how these then relate to the pertinent question: Are virtual observations an effective student teacher assessment method?

Supplementary information

Throughout the analysis the role of supplementary information was reinforced. In the context of these virtual observations, the Practicum Tutors used supplementary information to adjust for absences in the visuals they could usually access when assessing student teachers in-person. Supplementary information was therefore useful in aiding the Practicum Tutors to feel confident in their assessments of the student teachers.

Tutor O: It was also very difficult to see how work was being differentiated and how individual needs were being met. I was reliant on the lesson plan and the student's reflections to find more information about these areas.

Indeed, as Tutor O reveals, where gaps existed in the visual information, Practicum tutors were able to use the wider documentation prepared by the student teacher to help determine where each student was in relation to the Standard for Provisional Registration (GTCS, 2012). Different documents

were useful to Practicum Tutors depending on what they needed to explore, and thus the importance of the Practicum Tutor being sufficiently experienced and skilled became evident.

The skill of the Practicum Tutor was also emphasised in the relational aspects of the virtual observation where the Practicum Tutors could use an online conversation with the student teacher and their in-school supporter teacher to find out more about their practice and how they were meeting the relevant standards.

Tutor N: The video was only one part of the evidence I deployed to assess each student. The most important part of the process involved the learning conversation with the student based on their documentation, conversation with the teacher and the video.

This element of discussion about the supplementary information mirrors practice when Practicum Tutors would visit schools in-person. It reflects that observation is only part of the complexity of the classroom (Hannafin et al., 2010; O’Leary, 2017) and that it is important to contextualise and use additional information to form a more balanced assessment. This shows that virtual observations, when used as assessments, have similarities to in-person versions. It is not possible to see everything needed to make an assessment against the relevant standards in one observation, so supplementary information is required. Therefore, the need for supplementary information does not diminish the effectiveness of virtual observations, but it does pose some questions that need further exploration.

Dimensions of time saving

Time as a linked theme relates to travel time, workload time for Practicum Tutors, timetabling in schools and processing time. In the findings we found that this was often a polarised dimension with some tutors seeing savings and advantages to the virtual method and others seeing challenges and disadvantages. From a sustainability perspective, time reductions in travel would also see increased time for Practicum Tutors to undertake other work-related tasks. As Tutor F suggests, this is advantageous to employers and potentially to the Practicum Tutors themselves. However, relationally, building relationships and gaining job satisfaction from being in the live teaching space are far more challenging using virtual observations.

Tutor C: From the tutor's point of view there was very little job satisfaction in this whole process. Live visits to school are the most enjoyable part of the job and interactions with both students and pupils make the whole thing worthwhile.

Therefore, the advantages of flexibility, reduced travel and associated costs need to be weighed against relationships and experiences. Crucially, understanding more about virtual observations from a student teacher perspective would be important as this could help further clarify the position virtual observations could occupy in any future teacher education programmes.

Importance of checking quality and positioning of recording

The visuals and audio in a recording matter to the Practicum Tutor. Where negative experiences were encountered, it was frequently linked to poor visuals or interrupted audio. If a protocol like the one used in this research was to be enacted in future visits, the visuals and audio of each recording would need to be secure. This is because the absent elements relating to the interplay of pedagogical approaches (e.g., seeing pupils answer questions) need a sufficient level of recording quality in order to enable the experience and skilled Practicum Tutor to analyse and comprehend the information and check this against supplementary documentation. Poorer quality recordings inhibit this process. So, it would be important in future virtual observations to spend time with the student teachers explaining in greater depth the importance of these elements, so that they practise and improve the overall quality of their recordings.

The importance of a skilled observer with relevant experience and expertise

Virtual observations depend on skilled observers. This is reflected in Hannafin et al. (2010), and emphasises that a key element of the virtual observation process is the Practicum Tutor. The virtual observations in this research relied on experienced and expert Practicum Tutors who discerned, inferred, and comprehended the virtual information they were given. This is similar to other research (Admiraal et al., 2011) which shows assessors are able to use their skill and prior experience to effectively bridge elements that were less clear by linking to supplementary information located in the paperwork that the student teachers provided, or through discussion with the student teacher or the teacher supporting them in their practicum.

Tutor O: *I was reliant on the lesson plan and student's reflections to find our more information.*

Tutor Q: *In conjunction with the weekly review form... discussions with students and teachers, allowed for an accurate assessment to be made.*

While the Practicum Tutors themselves did not suggest that they were able to undertake virtual observations because of their experience and skill, it was clear in the situational analysis that this was an important contextual factor. Due to the Practicum Tutors being qualified and experienced teachers, they were able to see and draw effective assessments from the information the virtual observations gave them and then use supplementary information to further justify and evidence their assessments. As such the importance of the skills observer should not be underestimated.

Summary

Considering the effectiveness of Virtual Observations is key to the situational analysis of this paper. The map below shows the overall considerations. These build on the points made in the discussion about technique, time and supplementary information.

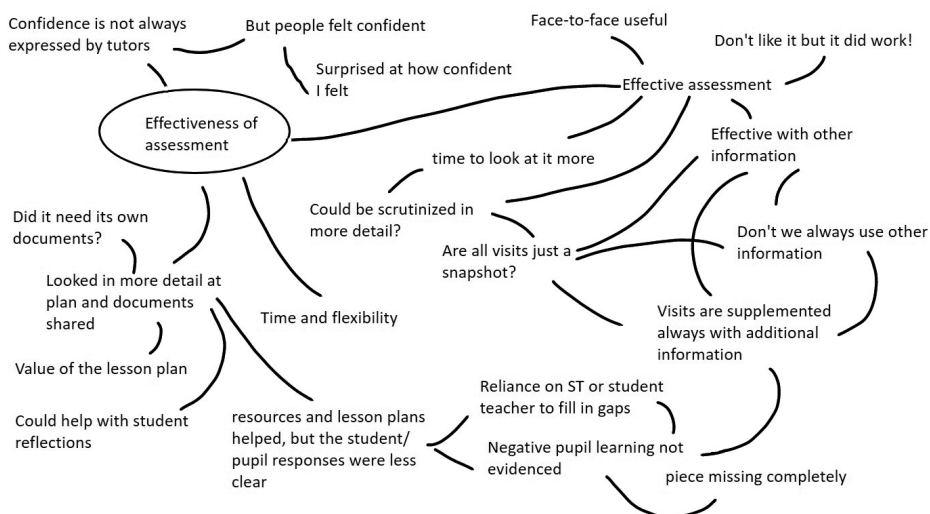


Figure 6. Map of theme: Effectiveness of Assessment

Virtual observations can be used effectively as a method of undertaking student teacher assessments while the student teacher is in placement. However, the effectiveness of these observations depends on specific caveats.

The first of these caveats is that the information the Practicum Tutor has available is different from traditional in-person observations. This means that the Practicum Tutor needs to be a skilled practitioner, familiar with classroom practices, in order to explore the supplementary information available to them; this enables them to ascertain where the student teacher is in relation to the standards against which they are being assessed. Tutor Q summarised this well by saying that the virtual observation should be seen in conjunction with wider documentation to provide an insight into how the student teacher is performing.

The second caveat is that the visuals – what the observer is seeing – are important. The more the tutor can see, the more information they have. Restrictions due to the need to implement a large-scale system of virtual observation during an international pandemic meant that it was more productive to focus on a usable system. Yet, in hindsight, continuing to reach agreement on data protection matters, so that all pupils could be observed, would have improved the visual information for the Practicum Tutor, which could, in turn, have supported them in exercising their professional expertise. This would have reduced the need to rely as heavily on audio, additional supplementary documentation or the teacher support the student teacher in the classroom. However, improvements to the visuals will not detract from the wider supplementary information, which this research has shown to maintain its own importance in the assessment process, but will add to it.

Overall, virtual observations were effective, as a pandemic measure. While improvements can be made to how recordings are generated, the Practicum Tutors were able to exercise their professional expertise and skill to effectively assess the student teachers against the relevant standards. There is also a lot of future potential that should be explored in relation to virtual observations in Scotland. Reductions in travel, time saving, and flexibility are some key areas this research has identified. Further to this, Practicum Tutors identify that virtual observations could become a formative process where student teachers are encouraged to engage actively with their own development: this underlines the potential that needs to be explored and the relative confidence some of the Practicum Tutors had in using virtual observations.

References

- Admiraal, W., Hoeksma, M., van de Kamp, M. T., & van Duin, G. (2011). Assessment of teacher competence using video portfolios: Reliability, construct validity, and consequential validity. *Teaching and Teacher Education*, 27(6), 1019–1028. <https://doi.org/10.1016/j.tate.2011.04.002>
- Baecher, L., McCormack, B., & Kung, S. (2014). Supervisor use of video as a tool in teacher reflection. *The Electronic Journal for English as a Second Language (TESL-EJ)*, 18(3), 1–17.
- Bolton, M. (2010). Fly on the wall: Using teleconferencing to supervise student teacher performance. *Journal of Open, Flexible and Distance Learning*, 14(1), 62–76.
- Birks, M., Chapman, Y., & Francis, K. (2008). Memoing in qualitative research: Probing data and processes. *Journal of Research in Nursing*, 13(1), 68–75. <https://doi.org/10.1177/2F1744987107081254>
- Clarke, A. (2003). Situational analyses: Grounded theory mapping after the postmodern turn. *Symbolic Interaction*, 26(4), 553–576.
- Clarke, A. (2005). *Situational analysis: Grounded theory after the postmodern turn*. Thousand Oaks, CA: SAGE Publications.
- Clarke, A., Friese, C., & Washburn, R. (2018). *Situational analysis: Grounded theory after the interpretive turn* (2nd ed.). Thousand Oaks, CA: SAGE Publications.
- Dyke, M., Harding, A., & Liddon, S. (2008). How can online observation support the assessment and feedback, on classroom performance, to trainee teachers at a distance and in real time? *Journal of Further and Higher Education*, 32(1), 37–46. <https://doi.org/10.1080/03098770701781432>
- Galletta, A. (2013). *Mastering the semi-structured interview and beyond: From research design to analysis and publication*. New York: New York University Press.
- Glaser, B. (2004). Remodeling grounded theory. *Forum: Qualitative Social Research Sozialforschung (FQS)*, 5(2). Retrieved from <http://nbn-resolving.de/urn:nbn:de:0114-fqs040245>
- General Teaching Council for Scotland (GTCS), (2012). *The standards for registration: Mandatory requirements for registration with the General Teaching Council for Scotland*. <http://www.gtcs.org.uk/web/FILES/the-standards/standards-for-registration-1212.pdf>
- Graham, A., MacDougall, L., Robson, D., & Mtika, P. (2019). Exploring practicum: Student teachers' social capital relations in schools with high numbers of pupils living in poverty. *Oxford Review of Education*, 45(1), 119–135.
- Hannafin, M. J., Shepherd, C. E., & Polly, D. (2010). Video assessment of classroom teaching practices: Lessons learned, problems and issues. *Educational Technology*, 50(1), 32–37. Retrieved from <https://www.jstor.org/stable/44429762>
- Johnston, D. H. (2020). School placement: Problematising notions of the 'good' placement. In R. Shanks (Ed.), *Teacher preparation in Scotland* (pp. 111–124). Bingley: Emerald Group Publishing Ltd.
- Kolb, S. (2012). Grounded theory and the constant comparative method: Valid research strategies for educators. *Journal of Emerging Trends in Educational Research and Policy Studies*, 3(1), 83–86.

- Liang, J. (2015). Live video classroom observation: An effective approach to reducing reactivity in collecting observational information for teacher professional development. *Journal of Education for Teaching: JET*, 41(3), 235–253. <https://doi.org/10.1080/02607476.2015.1045314>
- Mac Mahon, B., O'Grádaigh, S., & Ní Ghuidhir, S. (2019). Super vision: The role of remote observation in the professional learning of student teachers and novice placement tutors. *TechTrends*, 63, 703–710. <https://doi.org/10.1007/s11528-019-00432-z>
- Merriam, S. A., & Tisdell, E. J. (2016). *Qualitative research: A guide to design and implementation*. San Francisco: Jossey-Bass.
- Mitchell, N., Marsh, B., Hobson, A. J., & Sorensen, P. (2010). 'Bringing theory to life': Findings from an evaluation of the use of interactive video within an initial teacher preparation programme. *Teacher Development*, 14(1), 15–27. <https://doi.org/10.1080/13664531003696543>
- Mtika, P. (2011). Trainee teachers' experiences of teaching practicum: Issues, challenges and new possibilities. *Africa Education Review*, 8(3), 551–567.
- O'Grádaigh, S., Connolly, C., Mac Mahon, B., Agnew, A., & Poole, W. (2021). An investigation of emergency virtual observation (EVO) in initial teacher education in Australia and Ireland during the COVID-19 Pandemic. *Irish Educational Studies*, 40(2), 303–310. <https://doi.org/10.1080/03323315.2021.1916561>
- O'Leary, M. (2017). *Reclaiming lesson observations: Supporting excellence in teacher learning*. London: Routledge.
- Scottish Parliament, (2017). *Teacher workforce planning for Scotland's schools*, 10th Report, Edinburgh: Scottish Parliament.
- Shepherd, C., & Hannafin, M. (2011). Supporting Preservice Teacher Inquiry with Electronic Portfolios. *Journal of Technology and Teacher Education*, 19(2), 189–207.
- Strübing, J. (2007). Research as pragmatic problem solving. In A. Bryant, & K. Charmaz (Eds.), *The SAGE handbook of grounded theory* (pp. 580–601). Thousand Oaks, CA: SAGE Publications.
- Zeichner, K. (2010). Rethinking the connections between campus courses and field experiences in college and university-based teacher education. *Journal of Teacher Education*, 61(1–2), 89–99.

Appendix A: Extract from Protocol for Virtual Observations

How a visit will take place

The diagram below sets out the process that the virtual tutor visit will go through. This process ensures that the same amount of support, time and care goes into each student assessment. Timings are flexible so the process can

be done in one day or over a couple of days depending on the different time constraints the tutor and school-based staff have.

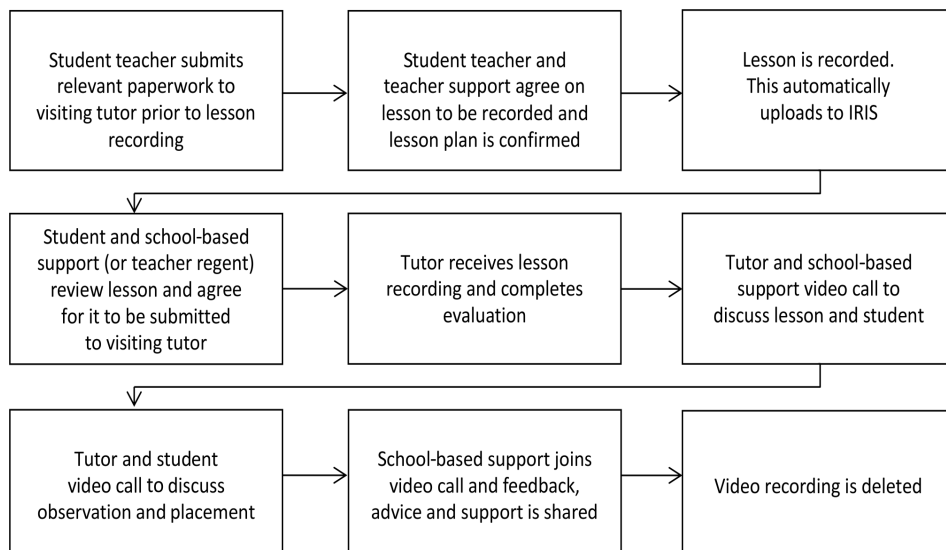


Figure 7. Flowchart of virtual observations

Who will receive a virtual tutor visit?

Initially virtual tutor visits will take place for students studying on the PGDE Primary/ DLite Primary/ PGDE Secondary and MA Primary Education programmes. If the Covid-19 advice changes, it is possible for all programmes to have a virtual tutor visit, but priority for in-person visits remains as outlined in the rationale.

Safeguarding

The [online platform] system is a secure system and the protocol set out will enable a school leader to review and check any recordings made in school prior to them being shared with the university tutor. With all videos being deleted after assessment is completed.

As with an in-person visit, if a visiting tutor has any welfare or safeguarding concerns, they will raise these with the relevant member of the school's leadership team.

Connectivity

Where there are connectivity challenges, [online platform] will upload as the connectivity returns. If there are connectivity challenges will endeavour to undertake an in-person visit/alternative approach.

Permission

Before a virtual observation approach can be undertaken, we need to gain the appropriate permissions for each of the partnership local authorities. We hope that this protocol helps explain the reasoning behind adopting a virtual approach for some of our tutor visits this year, as they will reduce the number of people visiting schools in the autumn and winter of 2020.

The university will be the data holder and so local authorities and privacy notices will be issued by the university.