



Technology-Enhanced Assessment Feedback on Preservice Teachers' Core Teaching Practices

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ABSTRACT

The teaching practicum has been characterised by “wicked feedback” problems. Feedback is essential for enhancing student teachers’ core teaching practices. Student teachers are most vulnerable when they have to present lesson segments and may not know whether they are doing it correctly. Providing actionable, timely and constructive feedback is challenging at the best of times and this became even more so during the COVID-19 pandemic. This proactive action research study aims to provide an overview of the utilization of technology-enhanced feedback (digital screen recording) on preservice teachers’ practicum assessment tasks and to report on their perceptions of, reflections on, and uptake of the feedback. A group of fifteen preservice teachers and two teacher educators from a university in the North West Province participated in the study. The findings indicate that technology-enhanced feedback motivates student teachers to engage with the feedback because it facilitates the personalization of feedback, fosters relationships between preservice teachers and teacher educators, and increases the uptake of feedback that results in improved teaching practicum performance tasks. The study informs a developing understanding of the pedagogic potential of feedback via technology and its uptake within an environment that is becoming increasingly digital. The article concludes with recommendations for exploiting the potential benefits of technology-enhanced feedback to ensure uptake and facilitate the improved teaching practice of preservice teachers within teaching practicum settings.

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INTRODUCTION

The COVID-19 pandemic has affected most universities’ teaching, assessment and feedback practices and processes.¹ Regardless of what happens in the coming academic year, it is likely that many practices will remain unchanged and/or shift to digital. In the North-West University Faculty of Education Teaching, Learning and Assessment Plan, it is stated that “Going into 2022, we are

¹ Patrick Baughan et al., “Re-Considering Assessment and Feedback Practices in Light of the Covid-19 Pandemic,” in *On Your Marks: Learner-Focused Feedback Practices and Feedback Literacy*, ed. Patrick Baughan (Advance- HE, 2020), 179–92.

challenged by the realisation that we can never return to a full contact timetable for students enrolled in contact programmes.”²

The forced changes brought about due to the pandemic and the digital shift have allowed many teacher educators to rethink one of the “wicked problems” of the work-integrated learning (WIL) (i.e., the teaching practicum) component of preservice teachers’ education, namely feedback.³ Feedback during WIL is considered to be a risky, uncertain and inconsistent endeavour.⁴ Student teachers express dissatisfaction and frustration about the timeliness of the feedback, the inability to act on the feedback, the lack of explanation of the use of rubrics and sometimes the incomprehensibility.⁵ On the other hand, teacher educators complain about the time-intensiveness of providing detailed feedback, especially to large numbers of student teachers, and student teachers’ unwillingness to respond to the feedback.⁶ McGarvey et al. state that “both parties tread a well-worn path leading to an accumulation of ‘feedback waste!’”⁷ Feedback is the bedrock of effective teaching practice and student achievement.⁸ Student teachers are especially “vulnerable at the point of application” when teaching learners and may not know if they are doing so correctly.⁹ Cantillon and Sargeant state that, “without feedback, good practice is not reinforced, poor performance is not corrected, and the path to improvement not identified.”¹⁰

Baughan et al. state that “assessment and feedback have provided a particularly demanding issue, in which rapid decisions have been made and assessment tasks and processes have been revised.”¹¹ This is especially true with the teaching practicum which was moved online and where the focus was on learning from practice (e.g., approximations of practice)¹² rather than learning in practice (e.g., school-based placement).¹³ Researchers such as Carless, Pitt and Winstone have proposed a shift from telling or giving information as feedback to a more engaged and dialogic approach to feedback where feedback is acted upon by the students so as to improve student performance and achievement.¹⁴

² North-West University, “Faculty of Education Teaching, Learning and Assessment Plan.,” (North-West University 2022).

³ Carisma Nel and Elma Marais, “Addressing the Wicked Problem of Feedback during the Teaching Practicum,” *Perspectives in Education* 39, no. 1 (March 12, 2021): 410–26, <https://doi.org/10.18820/2519593X/PIE.V39.I1.25>.

⁴ Richard K. Coll and Karsten E. Zegwaard, “Perceptions of Desirable Graduate Competencies for Science and Technology New Graduates,” *Research in Science & Technological Education* 24, no. 1 (May 2006): 29–58, <https://doi.org/10.1080/02635140500485340>.

⁵ Nel, and Marais, “Assessing the wicked problem of feedback during the teaching practicum.”; David Carless and David Boud, “The Development of Student Feedback Literacy: Enabling Uptake of Feedback,” *Assessment & Evaluation in Higher Education* 43, no. 8 (November 17, 2018): 1315–25, <https://doi.org/10.1080/02602931003786559>. <https://doi.org/10.1080/02602938.2018.1463354>.; David Nicol, “From Monologue to Dialogue: Improving Written Feedback Processes in Mass Higher Education,” *Assessment & Evaluation in Higher Education* 35, no. 5 (August 2010): 501–17,

⁶ Jackie Tuck, *Academics Engaging with Student Writing : Working at the Higher Education Textface* (Abingdon: Taylor & Francis, 2017).

⁷ David McGarvey et al., “Developing the Scientific Reporting Skills of Chemistry Students through Dialogic Assessment/feedback Cycles and Use of Journal Articles as Paradigms of Professional Practice,” in *On Your Marks: Learner-Focused Feedback Practices and Feedback Literacy*, ed. Patrick Baughan (Advance HE, 2020), 47–60.

⁸ John Hattie and Helen Timperley, “The Power of Feedback,” *Review of Educational Research* 77, no. 1 (March 16, 2007): 81–112, <https://doi.org/10.3102/003465430298487>.

⁹ Michael G. Moore, “Editorial: Three Types of Interaction,” *American Journal of Distance Education* 3, no. 2 (January 1989): 1–7, <https://doi.org/10.1080/08923648909526659>.

¹⁰ P. Cantillon and J. Sargeant, “Giving Feedback in Clinical Settings,” *BMJ* 337, no. nov10 2 (November 10, 2008): a1961–a1961, <https://doi.org/10.1136/bmj.a1961>.

¹¹ Baughan, et.al, *On your marks: Learner-focused feedback practices and feedback literacy*, 179.

¹² Pam Grossman, Karen Hammerness, and Morva McDonald, “Redefining Teaching, Re-imagining Teacher Education,” *Teachers and Teaching* 15, no. 2 (April 29, 2009): 273–89, <https://doi.org/10.1080/13540600902875340>.

¹³ Nel, and Marais, “Assessing the wicked problem of feedback during the teaching practicum.”

¹⁴ David Carless, *Excellence in University Assessment: Learning from Award-Winning Practice*. (London: Routledge, 2015); Edd Pitt and Naomi Winstone, “Towards Technology Enhanced Dialogic Feedback,” in *Re-Imagining University*

Baughan et al. state, “social distancing or not, feedback processes need to be based on sound pedagogic principles.”¹⁵ Extrapolating from the research of Boud and Molloy and Winstone and Carless, Baughan et al. propose the following principles to guide feedback designs for online learning environments, “pedagogy rather than technology drives decision-making, learners need to be actively positioned in generating and making sense of feedback, interaction needs to be engineered to avoid the limitations of one-way transmission of information, social and relational aspects are attended to within an ethos of care and trust, and opportunities to take action in response to feedback information are provided.”¹⁶

Fortunately, screen recordings, which include audio, video and text, offer a promising supplement to both written comments and face-to-face dialogue, which usually takes place after teacher educators have observed student-teacher lessons during school-based WIL.¹⁷ Graham states that “many learners want the convenience offered by a distributed environment yet do not want to sacrifice the social interactions and human touch they are used to in a face-to-face environment.”¹⁸ Oncu and Cakir explain that technological innovations, such as screen recordings, have the potential to provide the personal, supportive and encouraging feedback they require.¹⁹ Student teachers studying via an open distance learning mode are particularly dependent on technology-enhanced innovations that may ensure that they get effective, productive and dialogic feedback that will help them achieve the required standards, goals or benchmarks.²⁰

Research indicates that technology-enhanced feedback such as screencast recordings can allow student-teachers to pause and watch the recording as many times as required.²¹ They provide teacher educators with the opportunity to provide detailed comments that can link to evidence-based practice,²² and the information can be provided in a personalised²³ and supportive manner.²⁴ According to Cavanaugh and Song, this can be attributed to the fact that screen recordings enable student teachers

Assessment in a Digital World., ed. M., Bearman et al., vol. 7 (Charm: Springer, 2020), 79–94, https://doi.org/10.1007/978-3-030-41956-1_7.

¹⁵ Baughan, et.al., *On your marks: Learner-focused feedback practices and feedback literacy*, 180.

¹⁶ Baughan, et.al., *On your marks: Learner-focused feedback practices and feedback literacy*, 180.

¹⁷ Tracii Ryan, Michael Henderson, and Michael Phillips, “Feedback Modes Matter: Comparing Student Perceptions of Digital and Non-digital Feedback Modes in Higher Education,” *British Journal of Educational Technology* 50, no. 3 (May 25, 2019): 1507–23, <https://doi.org/10.1111/bjet.12749>; Tracii Ryan, “Effective Feedback in Digital Learning Environments.,” *Melbourne Centre for the Study of Higher Education*, Melbourne CSHE Discussion Paper. (Melbourne: Melbourne Centre for the Study of Higher Education. Building 134, Spencer Road, The University of Melbourne VIC 3010e. Tel: + 61-3-8344-4605; e-mail: melbourne-cshe@unimelb.edu.au; Web site: <http://melbourne-cshe.unimelb.edu.au>, June 2020).

¹⁸ Charles R. Graham, “Blended Learning Systems: Definition, Current Trends, and Future Directions,” in *Handbook of Blended Learning: Global Perspectives, Local Designs*, ed. C. J. Bonk and C. R. Graham (San Francisco, CA: Pfeiffer Publishing, 2004).

¹⁹ Semiral Oncu and Hasan Cakir, “Research in Online Learning Environments: Priorities and Methodologies,” *Computers & Education* 57, no. 1 (August 2011): 1098–1108, <https://doi.org/10.1016/j.compedu.2010.12.009>.

²⁰ Terry Anderson, “A Rose by Any Other Name: Still Distance Education - A Response to D.R. Garrison Implications of Online and Blended Learning for the Conceptual Development and Practice of Distance Education.,” *International Journal of E-Learning & Distance Education / Revue Internationale Du e-Learning et La Formation à Distance* 23, no. 3 (November 14, 2009): 111–16, <https://www.ijede.ca/index.php/jde/article/view/653/981>.

²¹ Ryan, Henderson and Phillips, “Feedback modes matter: Comparing student perceptions of digital and non-digital feedback modes in higher education.” 1507–23.

²² John Orlando, “A Comparison of Text, Voice, and Screencasting Feedback to Online Students,” *American Journal of Distance Education* 30, no. 3 (July 2, 2016): 156–66, <https://doi.org/10.1080/08923647.2016.1187472>.

²³ Helen Knauf, “Reading, Listening and Feeling: Audio Feedback as a Component of an Inclusive Learning Culture at Universities,” *Assessment & Evaluation in Higher Education* 41, no. 3 (April 2, 2016): 442–49, <https://doi.org/10.1080/02602938.2015.1021664>.

²⁴ Jered Borup, Richard E. West, and Rebecca Thomas, “The Impact of Text versus Video Communication on Instructor Feedback in Blended Courses,” *Educational Technology Research and Development* 63, no. 2 (April 26, 2015): 161–84, <https://doi.org/10.1007/s11423-015-9367-8>.

to see the teacher educators' facial expressions, as well as hear the tone of voice.²⁵ In addition, the split screen enables the student teachers to see and hear the teacher educator's comments while at the same time viewing their work with text and annotations or the rubric in another area of the screen. The purpose of this paper is to address the following research questions:

- What are the concerns that student teachers and teacher educators have with regard to feedback practices?
- What are the perceptions of the student teachers with regard to the technology-enhanced feedback they received?
- How does the content and uptake of the technology-enhanced feedback compare with the content received and uptake of feedback during previous learning from practice tasks during the teaching practicum?

RESEARCH METHOD

The aim of the research methodology is to describe the process followed while conducting a study.²⁶

Research Paradigm

This study is situated within a participatory paradigm. Howell states that “for the participatory paradigm, experience underpins the epistemology” and “the methodological position involves collaboration and action with everyday existence and language or discourse involving a primary aspect of the research process.”

Research Design and Approach

This study utilises a qualitative approach and a proactive action research design.²⁷ In proactive action research, the action takes place before the data collection (i.e., you act and then study the effects of your actions). According to Schmuck, “In proactive action research, creative problem solving and innovative practice precede data collection; however, your desire to risk doing something new often stems from past, preconscious data collections.”²⁸ In this study, the aim is to try a practice that has not before been used within the work-integrated learning (i.e., teaching practicum) module, namely technology-enhanced feedback within a community of practice of student teachers and teacher educators. When collecting data utilising the proactive action research design, one seeks to judge the “merit and worth or results”. According to Schmuck, “to achieve merit, a result must have intrinsic value”, and “to achieve worth, a result must have extrinsic value.”²⁹

Participants and Sampling

Participant selection included a purposeful sampling of information-rich cases to study them in depth (i.e., student teachers and teacher educators).³⁰ The participants included fifteen student teachers and two teacher educators from a university in the North West Province. During the learning-from-practice component of the teaching practicum student-teachers in their fourth year of the Baccalaureus Education (BEd) degree are allocated to teacher educators in order to complete a simulated teaching task (i.e., a PowerPoint presentation with voiceover in which they have to explain/model core content within a specific subject area). Three student teachers were enrolled for contact delivery (one from

²⁵ Andrew J Cavanaugh and Liyan Song, “Audio Feedback versus Written Feedback: Instructors’ and Students’ Perspectives,” 2014.

²⁶ Kassu Jilcha Sileyew, “Research Design and Methodology,” in *Cyberspace* (IntechOpen, 2020), <https://doi.org/10.5772/intechopen.85731>.

²⁷ Richard A. Schmuck, *Practical Action Research for Change*. (California, Thousand Oaks: Corwin Press, 2006).

²⁸ Schmuck, *Practical Action Research for Change*, 71.

²⁹ Schmuck, *Practical Action Research for Change*, 37.

³⁰ Michael Quinn Patton, “Two Decades of Developments in Qualitative Inquiry,” *Qualitative Social Work* 1, no. 3 (September 15, 2002): 261–83, <https://doi.org/10.1177/1473325002001003636>.

each of the three campus sites of the university – Mahikeng, Potchefstroom and Vanderbijlpark), and twelve students were enrolled for Open Distance Learning delivery. The fifteen student teachers were situated in four different provinces, Eastern Cape, Gauteng, Northern Cape, and North West, within South Africa (cf. Figure 1).



Figure 1. Student-teachers situated across South Africa
(Author developed using Google Maps)

Data Collection

Schmuck’s proactive action research model consists of three phases, each comprising a number of steps.³¹ During phase 1, the initiation phase of the proactive action research cycle, participants completed step 1, listing hopes and concerns (focusing on feedback practices) by participating in reflective conversations lasting approximately thirty minutes. These conversations took place via WhatsApp video call as the participants were spread out across South Africa (cf. Figure 1). During step 1, the aim was to address the first research question (What are the concerns that student teachers and teacher educators have with regard to feedback practices?). Step 2 entailed implementing technology-enhanced feedback on the simulated teaching task that formed part of the learning-from-practice component of the teaching practicum. The task the student teachers had to complete was to explain or model core content covered within Term 2 for Grade 3 or Grade 4 learners. The explanation was required to be no longer than six minutes in length because it had to be sent via WhatsApp. The student teachers recorded their explanations using PowerPoint with voiceover. They sent their explanations via WhatsApp to the specific WhatsApp group created by the first author for their simulated teaching lessons. The first author downloaded the files and used Active Presenter to provide screen recording feedback (audio, video and text/annotation) (cf. Figure 2 and Figure 3).

The teacher educator uploaded the files to the WhatsApp group for each student teacher. The student teachers watched their feedback and either initiated dialogue or responded to dialogue initiated by the teacher educator. The focus was on critically engaging with the content of the feedback. The student teachers then uploaded their new explanations after engaging with the feedback content and with the teacher educator. This process was repeated until both student teachers and teacher educators were satisfied with the product. The second author provided continuous technological support, such as assisting with questions related to shrinking the size of

³¹ Schmuck, *Practical Action Research for Change*, 37.

the files, helping with voiceovers, etc., if required. The second author also trained the first author in terms of using Active Presenter.

During the second phase, detection, step 3 entailed collecting the data (i.e., reflective conversation transcriptions, WhatsApp messages and voice notes). During the initial WhatsApp video call session, student-teachers indicated that they preferred to receive technology-enhanced feedback as well as any communication (i.e., dialogue between the student teachers and the teacher educators as well as WhatsApp text message responses to teacher educator questions) via a WhatsApp group set up by the first author. Once the data was collected, step 4 entailed checking what the data meant. The aim of the detection phase was to address research questions two and three (What are the perceptions of the student teachers with regard to the technology-enhanced feedback they received? and How does the content of the technology-enhanced feedback compare with the content received during previous learning from practice tasks during the teaching practicum?).

During phase three, judgment, step 5 focused on reflecting on alternatives or changes that needed to be made and step 6 entailed fine-tuning the practice. During steps 5 and 6, all participants participated in a WhatsApp Video call session lasting approximately 30 minutes where the focus was on determining the advantages and disadvantages of technology-enhanced feedback for simulated teaching tasks as part of the learning-from-practice component of the teaching practicum as well as the feedback uptake of the student teachers.

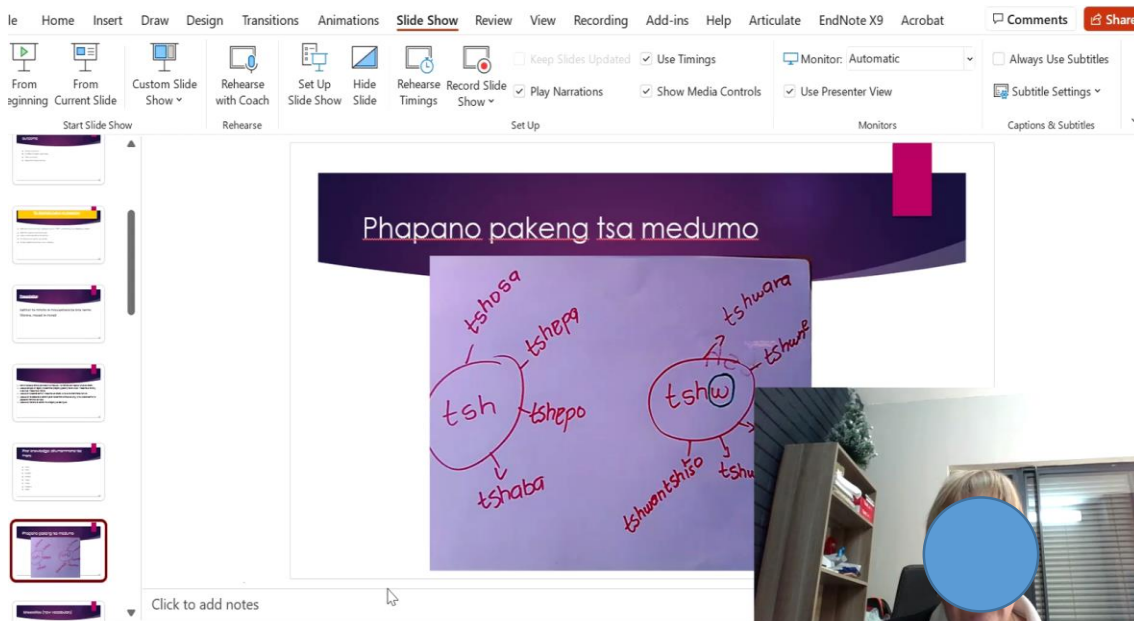


Figure 2. Screen recording with audio and visual feedback



Figure 3. Screen recording with textual comments

Data Analysis

A thematic qualitative text analysis process was followed in this study.³² The aim was to identify patterns and themes according to the research purpose.³³

Codes were assigned to specific segments of related meaning identified within the transcripts and commentaries.³⁴ Williams and Moser state that “the open, axial, and selective coding strategy enables a cyclical and evolving data loop in which the researcher interacts, is constantly comparing data and applying data reduction, and consolidation techniques. As the coding process progresses, its dynamic function and nonlinear directionality enable essential themes to be identified, codified, and interpreted in the service of a research study’s focus and contribute to the associated literature.”³⁵

The analysis process outlined above was conducted in a collaborative manner on a practical level which allowed for all members of the community of practice to collectively identify patterns, themes and relationships between and among the data sets. The collaborative discussion allowed the core practice of guided video analysis of reading instructional practice to be viewed with the aim of enhancing knowledge as well as facilitating core practices, thereby addressing collaborative agency.

Trustworthiness

In this study, trustworthiness is enhanced by using strategies such as member checking (all participants had access to the transcriptions and during phase two, all participants collaboratively checked on what the data meant and what additional steps should be taken), and peer review (a teacher educator outside the study helped to review the research process and data to identify any possible validity threats and raise awareness of the researchers’ possible own biases and assumptions). In addition, the researchers endeavoured to present the data and action research process in as much detail as possible to ensure thick and rich descriptions.

³² Udo Kuckartz, *Qualitative Text Analysis : A Guide to Methods, Practice & Using Software* (London: Sage, 2014), https://books.google.com/books/about/Qualitative_Text_Analysis.html?id=9B2VAgAAQBAJ.

³³ John Creswell and David Creswell, *Research Design : Qualitative, Quantitative, and Mixed Methods Approaches*, SAGE Publications, Inc. (US), 5th ed. (SAGE, 2018).

³⁴ E. Henning, W van Rensburg, and B Smit, *Finding Your Way in Qualitative Research*, *South African Journal of Psychology* (Pretoria: Van Schaik, 2004).

³⁵ Michael Williams and Tami Moser, “The Art of Coding and Thematic Exploration in Qualitative Research,” *International Management Review* 15 (2019): 45.

Ethical Aspects

Participants were informed of the purpose of the study and what their involvement would entail prior to commencement. Participants informed consent was obtained in writing which was sent via WhatsApp as an attachment. In this study, the researchers ensured that the participants' names were not used, nor was information shared that revealed their identity in any way. All data (video, audio and written) was stored on the first author's password-protected computer. Despite all the above-mentioned precautions, it was made clear to the participants that their participation was voluntary. No one was forced to participate, and they were free to withdraw at any time with no negative consequences. Ethical clearance was obtained by the first author from the EMELTEN-Rec ethical committee as well as the university gatekeeper.

RESULTS AND DISCUSSION

The results of this study are reported using the three thematic categories that address the research questions, namely the concerns related to feedback, student teachers' perceptions of technology-enhanced feedback, and the content and uptake of the technology-enhanced feedback.

Concerns related to feedback

The student teachers emphasised the following areas of concern:

As an ODL student, we usually only get a mark with comments such as, "This is not correct"; "Make sure the learners are engaged"; Good understanding shown"; "The examples you used were vague". So, generally, I just ignore the comments because I don't know what to do with them (cf. Figure 4).

In our practicum module we don't always get feedback from our lecturers; sometimes, random people we don't know come and observe our lessons. Afterward, they say some things, but I don't really engage with them because I don't know them, and I don't know what to say.

We do new lessons for each person that observes our lessons. The same lecturer doesn't assess you twice and each person's feedback is totally different.

The lecturer says during the lesson you said this or that. This is frustrating because I am so stressed that I can't always recall what I said or did, and sometimes I don't notice things happening in the classroom.

I experienced the feedback during the practicum as either praise or I get talked down to. I never get the opportunity to repeat the same lesson or to improve on it. I don't know what to improve anyway. Sometimes I must talk louder and be more confident.

LESSON-ASSESSMENT-FORM

Surname	Phase	Supervising teacher	
First-Name	Year-of-study	University-Lecturer	
Student-number	Subject	School	
		Date	

Preparation-file-properly-organized;-kept-up-to-date:

YES	
NO	

Mark-Allocation:-95%

KEY-CONCEPTS:

CK==Content-Knowledge: (The academic content knowledge of the teacher as a subject specialist).
PCK==Pedagogical-Content-Knowledge: (The teacher's knowledge of how to teach specific content (for example, adding fractions, or the concept of millennia) by using particular explanations, analogies, models or activities).
GPK==General-Pedagogical-Knowledge: (A teacher's understandings of a range of teaching, assessment, classroom organisation, and lesson planning strategies, as well the ability to use these strategies appropriately).
KoC==Knowledge-of-Context: (The teacher's knowledge of the specific context in which teaching takes place (The curriculum, school policies, school environment and the learners' context).

CRITERIA	Not-yet-coping	Emerging-teaching-competence	Developing-skilled-teaching-competence	Thoughtful,insightful-teaching-competence	Marks	Teacher/Tutor-comments
Lesson-Planning <i>(CK, PCK and KoC should be portrayed)</i>	1--2 Various-parts-of-the-lesson-are-missing-in-the-student's-planning.	3--4 The-student-portrays-some-understanding-of-lesson-planning-but-slips-up-in-various-parts.	5--6 The-student's-planning-portrays-several-positive-signs-but-he/she-needs-more-training-in-formulating-lesson-objectives-(and-or-identifying-key-questions),-alignment-of-teaching,-learning-and-assessment,-and-planning-of-tailor-making-resources.	7--8 The-lesson-has-been-planned-thoroughly.-CAPS-aims-have-been-broken-down-into-clear-lesson-objectives-(and-or-key-questions-have-been-identified),-teaching-and-learning-activities-make-perfect-sense-with-the-learning-activities-progressing-from-lower-to-higher-levels-of-cognition.-Assessment-has-been-perfectly-aligned-with-teaching-and-learning.-Resources-have-been-planned-to-enhance-the-quality-of-teaching,-learning-and-assessment.		Good. Good-understanding-shown.

Figure 4. Feedback using a rubric

The teacher educators expressed their concerns in the following ways:

I feel as if I am wasting my time when I give feedback. I am putting thoughts on paper, but the students don't get the opportunity to respond to any of them or engage with me. I also think they do not always understand my feedback. The same practices continue and the next time I get different students to observe and provide feedback.

Feedback is a frustrating activity. Our students aren't learning and improving their practices and I am just going through the motions.

The results indicated that the student-teachers got a mark for their practicum lesson and very limited useful, specific and actionable feedback. This often leads to misinterpretation or lack of comprehension. The most common feedback was either praise or negative comments without indicating how or what to improve. According to Borup et al., praise and correction are seldom sufficient.³⁶ What is needed is the feedback that closes the gap between student teachers' current and desired performance.³⁷ The results indicated that the teacher educators were frustrated because the student-teachers seldom paid attention to their feedback resulting in the teacher educators merely going through the motions of putting some comments on the rubrics to ensure compliance.

Student teacher perceptions about technology-enhanced feedback

³⁶ Borup, West and Thomas, "The impact of text versus video communication on instructor feedback in blended courses."

³⁷ Dylan Wiliam, "What Is Assessment for Learning?," *Studies in Educational Evaluation* 37, no. 1 (March 2011): 3–14, <https://doi.org/10.1016/j.stueduc.2011.03.001>.

The student teachers made the following comments:

This is the first time that I got to see my lecturer and talk to her about my explanations and ask her questions. I feel much closer to my lecturer, and she treats me like an equal and we learn together. She told me she learnt a lot about my context and learners and how, together, we tried new things.

I found the screen recording feedback strange at first, but we had a lecturer that supported us with all our technology-related questions. I liked the fact that I could see her doing things on the screen and I could follow her and stop the recording if I wanted to see it again.

The lecturer stopped my PowerPoint with a voiceover lesson snippet and commented on the exact places where she wanted changes or where she had questions for me.

The feedback was more detailed and specifically related to my lesson explanation. It was not feedback that was all over the show or mostly on classroom management. I have hardly ever received such detailed feedback on subject-specific aspects of my lesson.

The teacher educators commented on the following aspects:

It was as if I was personally talking to the student. I could give more detailed and subject-specific feedback than when I had to write only. I could say and explain so much more.

Because we used WhatsApp to send the screen recording feedback, we found that the student teachers responded immediately and engaged with us more on the task. They wanted to know how they could improve and why changes were needed. I linked theory/evidence-based research with practice and could see the improvement in the students' subsequent submissions.

I could also actively engage with the rubric and explain what was missing and what they could do to reach the required standard.

The results seem to support the statement made by Draft and Lengel that feedback provided by screen recording should “enable debate, clarification, and enactment more than simply provide large amounts of data.”³⁸ The student-teachers, as well as the teacher educators, indicated that the technology-enhanced feedback created a more personalised touch with each of them and the feedback was more detailed and specific and they could engage and discuss the feedback in a timely manner. The students were also given a number of opportunities to improve upon their lesson snippets and the teacher educators could gauge their progress and improvement. The focus was on closing the gap between their current performance and the desired performance and not so much on just obtaining a mark.

Content and uptake of technology-enhanced feedback

The student teachers made the following comments:

*This was a big change. In the past, the lecturers would say, “Use different types of questions”. Now, I get feedback such as. “In order to ensure that your learners are engaged, you need to elicit their background knowledge about the text. To do this, notice the types of questions you are asking. You tend to use mainly lower-order cognitive questions that require the learners to answer the obvious. Your text was *The Snowy Day*. One of your questions was, “What season is it?” Also, the learners' responses were mainly single words or simple sentences. Try to ensure that you ask most learners not only those that put up their hands; remember you need to check up on all your learners. Anita Archer always says, “Learning is not a spectator sport”.*

The teacher educators emphasised the following aspects:

I can really zoom in on specific aspects of their practice (e.g., asking questions to elicit background knowledge) and I can engage with them on this aspect when using WhatsApp.

³⁸ Richard L. Daft and Robert H. Lengel, “Organizational Information Requirements, Media Richness and Structural Design,” *Management Science* 32, no. 5 (May 1986): 554–71, <https://doi.org/10.1287/mnsc.32.5.554>.

When they re-submit their lessons, I can determine whether there is an improvement in that particular practice.

This was the first time I could see that the students were engaging with me, taking the feedback to heart, and addressing the issues we discussed in their follow-up submissions.

The results indicated that technology-enhanced feedback made the provision of content-specific feedback possible which is especially important within learning-from-practice teaching practicum opportunities. The feedback tended to reduce uncertainty, confusion and lack of understanding because the feedback was provided at specific points in the screen recordings and teacher educators could enhance the feedback by providing additional examples and referring to evidence-based research.

CONCLUSION

The advances in technology have opened up the possibility of providing actionable, timely, content-specific, consistent, goal-directed, personalized and dialogic feedback. Although time and workload are a reality, there is a need to consider the words of Wiggins carefully, “no time to give and use feedback” actually means “no time to cause learning.”³⁹ In the context of the COVID-19 pandemic, relational aspects are particularly salient in that supportive, personalized and flexible feedback can cater for the diverse and often very challenging circumstances in which student teachers and teacher educators find themselves. Technology-enhanced feedback (screen recording) used with WhatsApp as a platform for engagement and dialogue, preferred by student teachers in diverse and challenging contexts, may not be everyone’s cup of tea. However, the affordances it provides for improving student teachers’ core teaching practices during the learning-from-practice component of the teaching practicum were very effective in this study.

RECOMMENDATIONS

Teacher educators who are considering the implementation of technology-enhanced feedback, especially for the teaching practicum, may wish to consider the following:

- Be strategic about which components of the teaching practicum you wish to use for technology-enhanced feedback. Student teachers should be able to make sense of the feedback that is provided and also engage and act upon the feedback to ensure progress toward the desired goal.
- Teacher educators can work in pairs to ensure that their comfort levels with using the technology increase and that there is support for student teachers. In our study, one teacher educator was a subject specialist and the other was a technology specialist.
- Ensure that the screen recording feedback is no longer than 6 minutes or more than 45mb to ensure that students receive effective feedback, but that it can also be sent via, for example, WhatsApp.

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