

Using Virtual Coaching to Assess Fieldwork in Mathematics Teacher Preparation

Alesia Mickle Moldavan, Fordham University & Karen Andronico, Fordham University

In response to the COVID-19 health crisis, mathematics teacher preparation programs have had much to consider when planning for teacher candidates' field experiences in K–12 classrooms. Navigating placements and course-related fieldwork during school closures that involved transition to remote learning has not been an easy task, but it has enabled programs to re-envision innovative ways of engaging teacher candidates in collaborative, reflective assessments with the use of technology. Implementing video technology to record instruction and leverage reflection is increasingly being used in teacher education as a means of enhancing teacher noticing and assessing performance (Sherin, 2004; Star & Strickland, 2008; Sydnor, 2016; van Es et al., 2017). Virtual coaching via video technology can serve as a resource during a program's field experiences to establish meaningful feedback and collaboration among faculty, university supervisors, mentor classroom teachers, and teacher candidates in order to catalyze and support a shared vision for effective mathematics teacher preparation (Association of Mathematics Teacher Educators, 2017). Using video as a medium to support peer collaboration, virtual coaching, and self-reflection offers unique opportunities to advance field-related feedback for teacher candidates, especially during uncertain times with contextual constraints limiting traditional forms of assessment.

In the following, we discuss our experiences using a video technology application, known as *GoReact* (Speakworks, 2018), to facilitate field experiences with virtual classroom teaching observations and collaborative activities aimed at improving teacher candidates' instructional practices. We provide insights into our implementation efforts, including the challenges and opportunities presented by integrating a new digital tool, and note the various features of *GoReact* that have been useful in meeting our teacher preparation programs' needs. We also share feedback from those who used *GoReact* as a means of assessing fieldwork and discuss recommendations for others interested in using similar applications to support virtual coaching with collaborative feedback in real-time.

Our Context

In our roles as mathematics teacher educator and director of field education, we work in unison to ensure teacher candidates seeking certification in elementary and secondary mathematics education have field experiences in our programs that bridge theory into practice in K–12 classrooms. A key first step for supporting teacher candidates' classroom placements consists of meeting with support personnel (e.g., mentor teachers, supervisors) to communicate a shared vision of high-quality mathematics instruction and how to best support teacher candidates as they develop effective practices as reflective practitioners. Our placements prioritize urban teaching experiences with diverse learners and provide opportunities for teacher candidates to develop effective mathematics teaching practices that recognize social justice issues and promote equitable educational outcomes. Attention is also placed on teacher candidates receiving constructive feedback from personnel that strengthens professional practice.

When remote learning and associated virtual field experiences became the “new normal” in response to the health crisis, we knew field-related observations and coaching expectations would also need to adapt. To mitigate changes in our shared vision of developing teacher candidates as reflective practitioners, we began using *GoReact* to extend opportunities for them to receive mentoring, support, and feedback. After offering training on the application for teacher candidates and personnel, with help from the *GoReact* support team, we launched its use in our programs. While we received some initial pushback from a handful of personnel due to the required use of unfamiliar technology while simultaneously navigating COVID-19 uncertainties, most of the users viewed *GoReact* as an instructional tool to strengthen observational skills and contextualize feedback for improving pedagogical content knowledge.

GoReact

GoReact is a video technology application where users can upload video recordings for use in virtual coaching and assessment for skill development. The interactive features are user-friendly and offer opportunities for collaborative learning, personalized feedback, and structured self-reflection. While the application does require a subscription fee for student accounts, personnel have open access. To learn more about pricing information, the *GoReact* support team can be contacted. We worked with *GoReact* and our university to secure yearly licenses for teacher candidates, with these costs built into their program-related fees, so *GoReact* could be used across their methods courses as well as their year-long field experiences.

Our teacher candidates use *GoReact* to upload video recordings of classroom teaching presentations and skill demonstrations from video captured on their personal devices (e.g., smartphones, webcams). The flexibility of using personal devices limits the need for obtaining other recording devices that may not be readily accessible. The extended multi-camera support feature allows users to include up to nine devices simultaneously recording to host additional participants or include more camera angles (e.g., whole-class, small group). Additional supporting documents (e.g., lesson plans, student work) can also be uploaded to accompany the video and aid with feedback.

A benefit of *GoReact* is that peers and personnel can access the videos online or via a mobile browser option to provide feedback through time-stamped comments using customizable markers, accompanying rubrics, and other features for timely assessment. We created rubrics and markers aligned to our state’s teacher evaluation criteria as well as our programs’ standards and requirements (see Figure 1). We use the markers as codes to flag in what circumstances and how often teacher candidates demonstrate a specific skill (e.g., activates prior knowledge, differentiation, higher-order questioning, use of formative assessment). A summary graph of the markers is also available, documenting which skills were observed to inform future instructional goals (see Figure 2). In addition to time-stamped text, feedback can be provided through audio and video commentary. Furthermore, personnel can upload supplementary instructional resources and initiate strategically located conversational

prompts, so teacher candidates can engage in targeted analysis and collaborative reflection.

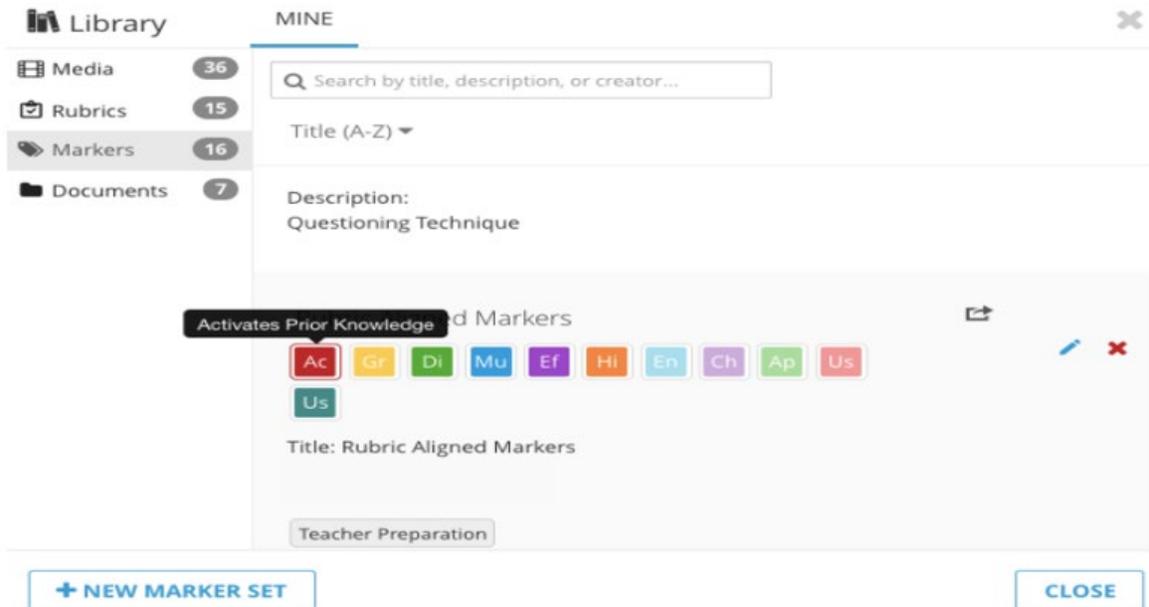


Figure 1: GoReact Markers. Sample markers used for coding video feedback.

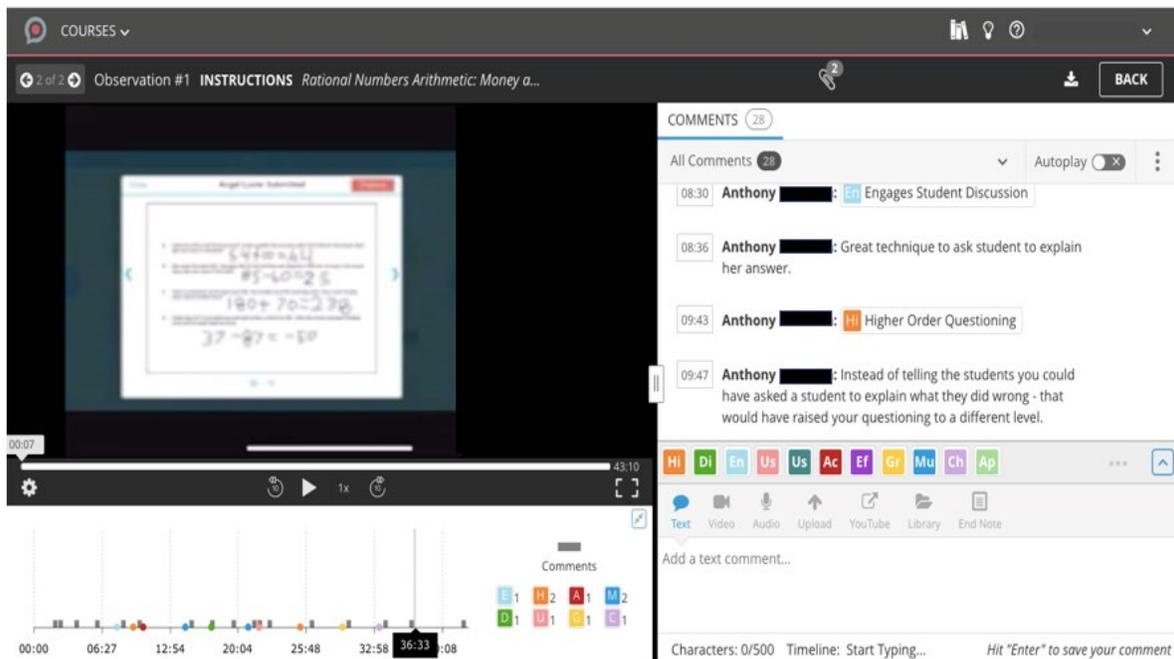


Figure 2: GoReact User Feedback. Sample summary graph of markers and real-time feedback.

User Feedback

From our perspective, teacher candidates and personnel experienced *GoReact* as an effective virtual coaching tool for real-time feedback. When surveying our teacher candidates, we received comments on the ease of uploading videos, which can be reviewed independently or alongside personnel to look for instances of research-based practices in use and to identify areas needing improvement. Several teacher candidates also shared their insights on the markers. For example, one teacher candidate said, “I found the time-stamped comments and markers to be particularly helpful and nearly as effective as having a supervisor in the room.” Another teacher candidate shared, “The real-time reference moments are particularly impactful for someone getting ready to complete a teacher performance assessment because the markers coincide with evidence (e.g., classroom culture, academic language, higher-ordered questioning) looked at by evaluators.”

GoReact was also viewed as a digital tool to enhance supervisors’ targeted feedback for teacher candidates, given that this feedback was directly linked to moments captured in a video. This perspective is communicated in one supervisor’s evaluation of *GoReact*, who was using the tool to examine how lesson plans were implemented to meet students’ learning needs: “I use the pause and comment features to give feedback that captures my immediate thoughts on how the instruction aligns with the lesson’s goals. The markers also help me narrow my feedback to key areas of analysis.” Further, the supervisors described how using video technology to assess fieldwork provides opportunities for teacher candidates to be critical of their own teaching, which helps them develop better skills for self-assessing professional practice to make informed teaching improvements.

Summary

For those interested in *GoReact* or similar applications to supplement and/or enhance fieldwork-related coaching and assessments, we recommend taking advantage of these digital tools to improve the observation and feedback experience for all involved. While we recognize the benefits of in-person observations in developing reflective practitioners, the health crisis has taught us to be flexible, resourceful, and innovative. Leveraging guided noticing through real-time feedback with the aid of video coaching narration, pivotal pausing, markers, and other digital features can enrich the assessment process and increase teacher candidate agency in post-observation conversations. If used well, virtual coaching via video technology can help us overcome “new normal” barriers, while also advancing the future of fieldwork assessment in mathematics teacher preparation.

References

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