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# **Video Reflection Cycles: Providing the Tools Needed to Support Teacher Candidates Toward Understanding, Appreciating, and Enacting Critical Reflection**

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This qualitative research study examined how teacher candidates' (TCs) participation in reflection cycles involving recording and viewing video of their teaching practice served to support their development as reflective practitioners. The reflection cycle included viewing and annotating one's own teaching, receiving peer and instructor dialogic feedback, and synthesizing the feedback to identify strengths, evidence of student (dis)engagement and learning as well as areas for continued professional growth. Analysis of the TCs' written reflections at the end of each reflection cycle underscored Larrivee's (2008) assertion that reflection is a complex and interweaving developmental process that is not necessarily linear. The findings highlight the role of teacher educators in supporting TCs to become more critically reflective.

Reflection on teaching and learning has become common practice in teacher preparation programs. Reflective practice is viewed by many as the epitome of professional teaching competence (see, for example, Cole & Knowles, 2000; Hatton & Smith, 1995; Schön, 1983; York-Barr, Sommers, Ghere, & Montie, 2006; Zeichner & Liston, 1996).

The practice of reflecting in and on action (Schön, 1983) can support teachers and teacher candidates (TCs) to think critically about teaching practice – both others' and their own (Cochran-Smith, 1991; Hollingsworth, 1989). Too often, however, teacher educators ask TCs to reflect without modeling or explaining what high-quality reflection is or explaining the powerful effect it can have.

In an effort to make reflection meaningful and impactful on practice, rather than the rote exercise it often becomes (Ticknor, 2014), we implemented a reflection cycle designed to support TCs' understanding, appreciation, and enactment of critical reflection. We ascribe to Larrivee's (2008) definition of critical reflection as demonstrating concern with the promotion of democratic ideals and ethical and social implications of classroom practices. To address this issue, we developed tools and practices to scaffold a more explicit path toward meaningful teacher candidate reflection.

This qualitative study examined elementary TCs' iterative reflective experiences in their teacher preparation program to support their development as reflective practitioners. The reflection cycle included (a) TCs' viewing and annotation of video recordings of their own teaching; (b) peer and instructor dialogic feedback on the recorded teaching; and, (c) TCs' synthesis of the feedback to identify areas of strength, evidence of student engagement or disengagement and learning, and areas for continued professional development.

The following section provides a review of the literature on teacher reflection, particularly its developmental nature, the affordances of video, and the use of rubrics to assess reflection. Following the review of the literature, we describe the context and design of our study. Then, to provide practical application ideas for other teacher educators interested in supporting more complex reflection, we explain the details of the reflection cycle, including tools such as the annotation platform, and practices such as prompts and rubrics. Finally, we explain our data analysis and findings and discuss the implications for teacher educators.

## **Review of the Literature**

Reflective practice has been recognized as a critical skill for professional educators for many decades. In discussing the complexity of learning from experience, John Dewey (1933, 1938) provided the foundation for understanding the role of reflection in education. He claimed that reflective action involves active, consistent, and thorough attention to one's beliefs and practices. Since then, reflection has become increasingly commonplace in the preparation of teachers as teacher educators

encourage both TCs and in-service teachers to learn from their experiences (Feiman-Nemser & Buchman, 1985).

### **Reflection as a Developmental Process**

Larrivee (2000) asserted that when teachers become reflective practitioners “they move beyond a knowledge base of discrete skills to a stage where they integrate and modify skills to fit specific contexts, and eventually, to a point where the skills are internalized enabling them to invent new strategies” (p. 294). Larrivee (2008) expanded on the notion of reflecting on one’s own practice by adding that reflective practice should also involve examination of the “ethical, social, and political consequences of one’s practice” (p. 343), as well as “conscious consideration of the moral and ethical implications and consequences of classroom practice on students” (Larrivee, 2000, p. 294). This critical reflection brings commonly held beliefs into question.

Critical reflection can create tension and cognitive dissonance as teachers see themselves through the eyes of others. Richardson (1996) argued that some teachers are unable or unwilling to do the work involved in attempting to confront the conflict between their purported beliefs and actions. Reflection is no simple task. It is a developmental process that requires guidance and work.

A good deal of literature exists that identifies and describes distinct levels of reflection (Day, 1993; Farrell, 2004; Jay & Johnson, 2002; Lyons, 1998; Van Manen, 1977). In Lyons’ (1998) study of reflection within the use of portfolios in teacher education, she found two key elements related to the developmental nature of reflection. First, reflection becomes more elaborate over time. Second, reflection can be scaffolded through critical conversations to foster an awareness of one’s practice.

Similarly, in her review of the research on reflective practice, Larrivee (2008) identified a common set of terms, which we adopted in this study, to describe four increasingly complex levels of reflection. These include prereflection, surface reflection, pedagogical reflection, and critical reflection.

Broadly, Larrivee (2008) described prereflection as reactive and absent of teacher agency, instructional decisions at the surface level as “made for efficiency,” those at the pedagogical as “based on a value judgement,” and those at the critical level as “based on a worth judgement” (p. 344). She continued, “Teachers move from initially asking ‘Am I doing it right?’ to eventually asking, ‘Is this the right thing to do?’ (p. 344). Larrivee’s conceptual framework provides a useful and concrete way of looking at TCs’ development as reflective practitioners and serves as a tool for creating explicit structures to mediate higher order reflection. We return to the levels Larrivee identified later and explain them in more depth in our data analysis.

## **Video as a Tool to Foster Reflective Practice**

The use of video recordings in teacher preparation programs is becoming more prevalent, particularly due to edTPA (a performance-based, subject-specific assessment and support system) and teacher certification requirements. It has become an integral part of many programs because viewing video recordings of their own teaching affords TCs the opportunity to “bridge the gap between theory and practice and supports [TCs’] attempts to apply what they have learned at the university in actual classroom lessons” (Blomberg, Renkl, Sherin, Borko, & Seidel, 2013, p. 93; see also Darling-Hammond, 2006) as they “examine their own teaching [somewhat] detached from the actual experience and...make the reflective comments of others come to life” (Snyder, 2011, p. 56).

Viewing their own teaching via video can provide immediate feedback to TCs and create cognitive dissonance between their beliefs and their own practices (Rich & Hannafin, 2009; Yerrick, Thompson, McLaughlin, & MacDonald, 2011). This cognitive dissonance can serve as a powerful catalyst for improving practice. Further, using video as a reflection tool allows TCs to ground their interpretations in classroom reality (Deaton, 2012; Yerrick et al., 2011).

Capturing video of teaching practice preserves the complexities of classrooms for meaningful, authentic, and reflective experiences for TCs (Ajayi, 2016; Kearney, 2013; Tripp & Rich, 2012) because they are able to see the actions of the classroom in real time and are afforded the option to replay certain events that may not have been noticed in the moment (Akcan, 2010). This action shifts the viewers’ attention from the exploration of vague memories about what transpired (Ball & Cohen, 1999) to a “more complex and evidence-based analysis” of the events (Rosaen, Lundeborg, Cooper, Fritzen & Terpstra, 2008, p. 349). Calandra, Brantley-Dias, Lee, and Fox (2009) and Stockero (2008) concluded that when TCs reflected on videos of themselves teaching their reflection closely resembled that of expert teachers.

When including video reflection in teacher preparation programs, several characteristics have been found to create an effective experience for TCs. Gaudin, Chaliès, and Amathieu (2018) found that studies of the effective use of video reflection included practices that were “organized, connected, adapted, and accompanied by the teacher-educator” (p. 170).

Although the use of videos in teacher preparation programs is not a new practice, in the past teacher educators have sometimes assumed that TCs had the tools to learn from this reflection. The result of this assumption may be that the most innovative of practices become rote exercises without appropriate tools. Skillful facilitation of video reflection *can* support engagement in deeper analysis of teaching practices (Llinares & Valls, 2009; Sherin & van Es, 2009). Our study, which describes the use of structured reflection cycles in an elementary teacher preparation program, built on the literature by examining the impact of various tools and practices on TCs’ reflective practice.

## **Using Rubrics to Assess Reflection**

Rubrics have been used to assess several practices within teacher preparation, including reflection to some degree. For example, Zahid and Khanam (2019) used a rubric to assess study participants' reflective teaching practice performance after the TCs were trained in reflective teaching practices. Among several items assessed by the rubric, researchers found that TCs improved communication, lesson planning, and assessment following training, but other aspects of their teaching were not found to have changed. Similarly, Campos (2017) used a rubric to assess, in part, TCs' "reflective learning process" (p. 33) including their perceptions of their ability to reflect and their ability to reflect critically (p. 35).

In a study of in-service teachers, Ray and Coulter (2008) used a researcher-created rubric to assess TCs' blog entries and found that "a majority (87%) of individual entries demonstrated some evidence of reflective writing" (p. 14). While some of the teachers' blog entries indicated qualities of metareflection, the data suggested "a low level of reflective practice occurring across the entries" (p. 14).

In a study of two groups of TCs, Calandra et al. (2009) stated, "We believe that video – specifically digital video editing – is particularly well suited for providing authentic, meaningful, reflective experiences for novice teachers" (p. 74). Calandra et al. used a rubric to "review participants' writing for levels of reflective language and thinking" (p. 80). In using the rubric, researchers rated TCs' written reflections at one of seven levels ranging from 1 – "No descriptive language" to 7 – "Explanation with consideration of ethical, moral, political issues" (p. 93).

Flores-Marti (2013) supported the practice of using a rubric to assess TCs' written reflections and insisted that "it is critical to share with the candidates these set of criteria prior to the lesson in order to be consistent with the objective of reflection" (p. 16). Likewise, Parkes and Kajder (2010) supported the use of rubrics to assess TCs' reflective practice as seen in vlogs, which included clips of the TCs teaching in field placements. In their study, TCs received feedback from faculty based on the rubric and also used the rubric themselves when providing feedback to peers on their vlogs. Parkes and Kajder found that "faculty gave students feedback that promoted deeper thinking, and therefore, deeper reflective writing" (p. 222).

## **Research Design**

The purpose of this study was to examine how participation in reflection cycles involving the viewing of videos of their teaching practice supported TCs' development as reflective practitioners. Our study adopted an interpretive qualitative design, well suited for the complexity of teaching in clinically rich contexts. Borko, Whitcomb, and Byrnes (2008) described this design as "research seeking to perceive, describe, analyze, and interpret features of a specific situation or context, preserving its complexity and communicating the perspectives of the actual participants" (p. 1025). The question that guided our inquiry was as

follows: How does participation in iterative video reflection cycles influence TCs' development as reflective practitioners?

## **Study Context**

In this study we examined what happened when a cohort of elementary education TCs were supported in iterative video reflection cycles designed to promote reflective practice. They were enrolled in a block of two three-credit courses – one focused on literacy methods and the other on management, organization, and instruction.

Courses were taught onsite in a Professional Development School near the university. TCs spent approximately 5 hours per week at the school, including time in seminars and classroom field experience. A university faculty member, who also served as the university's liaison to the elementary school, taught the courses and supervised the field placement. During the field placement, TCs were placed in pairs in classrooms ranging from kindergarten through sixth grade for approximately 2 hours per week. During this time, TCs observed and assisted in classrooms and also planned and taught a number of lessons, including a whole-class interactive read aloud, a series of six one-on-one process writing lessons, two small-group guided reading lessons, and two whole-class interdisciplinary lessons.

One of each type of lesson taught during the field placements was recorded, viewed, and annotated. Video reflection had been part of the program requirements for this block of courses for several years. Video annotation platforms (the one described here, GoReact!, and another, Edthena), for example, had been used in this block of courses for more than 5 years. Other tools described in this article, including the rubric, were piloted during the study. More details about the reflection cycle process and tools utilized for reflection are described in the sections that follow.

## **Participants**

To provide a closer look at how TCs experienced this process, we focused this study on four of the 20 TCs enrolled in the cohort. These four participants were selected using “purposeful random sampling” (Patton, 2002, p. 240) from the 16 TCs who had consented to have their assignments used for research purposes. Three of the four TCs were in their early twenties; one, Melissa, was in her early thirties and was changing careers to begin the teacher preparation program. The four TCs were enrolled in their first semester of their junior year.

Data were collected under an Institutional Review Board approved exempt protocol. All TCs enrolled in the block of courses completed the reflection cycle assignments. IRB permission was granted for the analysis of coursework from consenting participants, who, to prevent coercion, were not identified to the researchers until after final grades had been submitted.

## Role of the Researchers

To ensure internal validity in our qualitative research, we followed Lincoln and Guba's (1985) guidance by employing prolonged engagement, peer debriefing, and triangulation. The primary researcher was involved in all phases of data collection and analysis and also taught the courses, while two coresearchers assumed more responsibility at the data analysis stage.

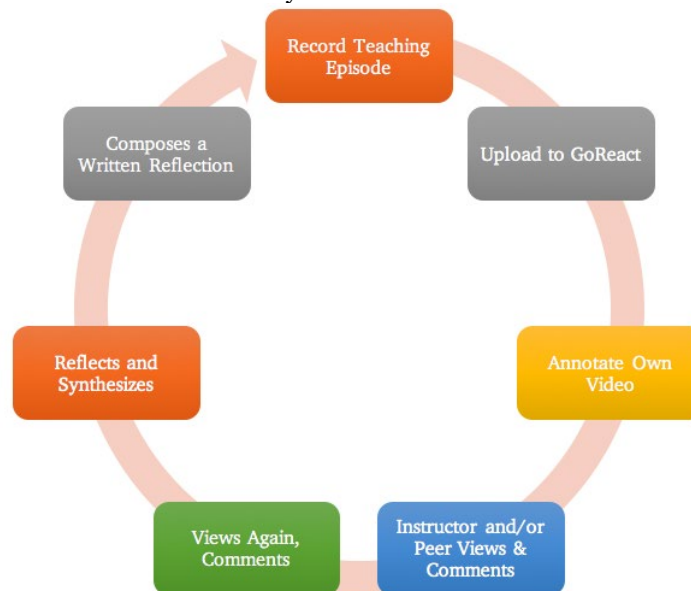
## Data Sources

The primary data sources for this study were the four TCs' written reflections that followed reflection cycles 2 (one-on-one writing lesson), 3 (small group guided reading), and 4 (whole-class interdisciplinary lesson). Additional data sources including annotations exported from GoReact! (a video annotation platform that allows for dialogue between the TC, peers, and the instructor around the video) were used to triangulate the findings.

## Reflection Cycles and Tools to Support Reflection

During the field component, TCs engaged in four reflection cycles. Figure 1 illustrates each step in the cycle.

**Figure 1** Video Reflection Cycle



The reflection cycle involved each TC recording their own teaching in whole-group, small-group, and one-on-one settings. Each TC then uploaded their video to GoReact! (or recorded their videos directly into the platform when possible). This platform served as a tool to allow dialogue between the TC, peers, and the instructor around the video.

Next, the TCs viewed and annotated their own video; one or more peers viewed the video and provided additional feedback through annotating, marking, and replying to questions posed by the TC. Following the peer-to-peer interaction, the instructor viewed the videos, read all the annotations, and provided additional comments on the video. Then, the TCs viewed their own video again to review and begin to synthesize the overall feedback from the conversations. Finally, the TCs composed written reflections synthesizing the conversation and outlining concrete next steps, grounded in evidence from the video, to improve their own teaching in subsequent teaching episodes.

Figure 2 is an interactive visual providing an overview of the timeline, expectations, and supports provided during each reflection cycle. Click the video and image icons to access additional information about and examples of the GoReact! platform, reflection prompt, rubric used to scaffold and assess TCs' reflective practice, and the minilessons that were used throughout the study.

### **Data Analysis**

We coded the qualitative data from the detailed reflective notes and final written reflections on teaching. We used a priori codes (Miles, Huberman, & Saldana, 2020) creating the codes based on Larrivee's (2008) identified levels of reflection. Data were read chronologically (according to the time of collection) by source (according to the reflective cycle) and by participant (e.g., all data collected from the student "Hannah").

All researchers individually coded data to identify levels of reflection in the data. Figure 3 illustrates the questions that guided our analysis of the data. Some of the data from the written reflections, however, did not fit neatly into any one level of reflection. Rather, TCs' reflections approximated practice indicators of more than one level. In these instances, we coded them as approximations or as "stretching" to a more complex level of reflection (Daley, Sydnor, & Davis, 2019).





**Figure 2.** Interactive Overview of Reflection Cycles and Tools

# OVERVIEW OF REFLECTION CYCLES & TOOLS



Click on the image and video icons above for information about the tools and strategies used in each cycle.


## CYCLE ONE: INTERACTIVE READ ALOUD

**Early-October** 


 Teacher candidates uploaded video to GoReact! and viewed their own teaching. This cycle was viewed as a practice run; data was not analyzed.


## CYCLE TWO: ONE-ON-ONE WRITING LESSON

**Early-November**  

 TCs went through entire reflection cycle. Reflection rubric was provided to TCs when writing reflection.


## CYCLE THREE: GUIDED READING LESSON


**Mid/Late-November** 

 TCs again when through entire reflection cycle. Reflection rubric was provided and instructor engaged TCs in mini-lessons to provide example of reflection at various levels.

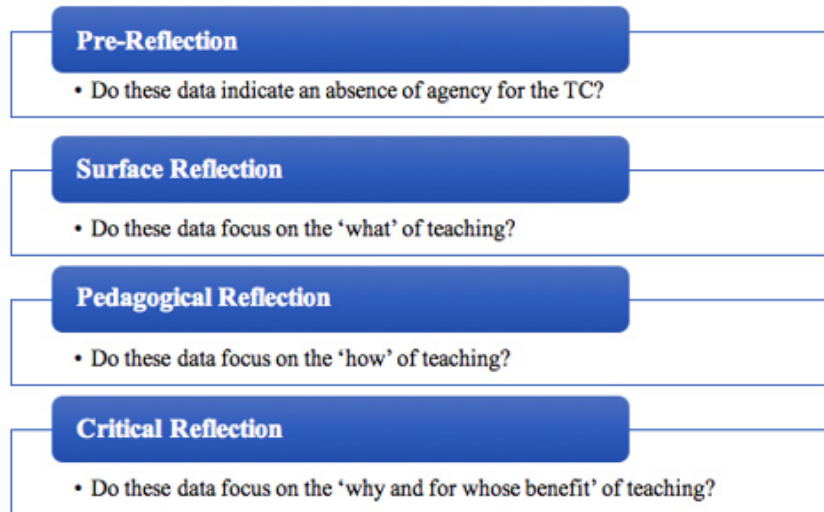
## CYCLE FOUR: INTERDISCIPLINARY LESSONS

**Early-December**

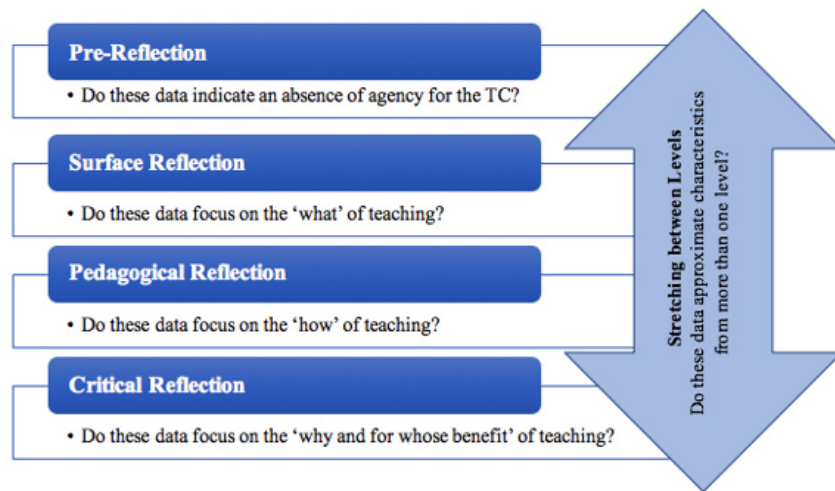
 TCs viewed and annotated their own videos. Written reflections involved reviewing previous lessons and synthesizing overall strengths and areas for continued growth.



**Figure 3** Data Analysis Questions



**Figure 4** Data Analysis Questions With the Addition of the Concept of Stretching



For example, a TC may have focused primarily on the “what” of teaching and referred mostly to next steps based on their own experiences but included some hints of research or theory, a practice indicator at the pedagogical level. Data such as this was coded as “surface stretching to pedagogical reflection.”

Finally, we came together for discussion, during which we confirmed similar coding or reached consensus on differing code. We also conducted a frequency count of the reflective cycles and organized this data into tables for further analysis.

## Findings

The analysis of TCs' written reflection confirmed that reflection is a developmental process and that, by using tools such as video annotation platforms, reflection prompts, rubrics, and minilessons, TCs' reflective practice became more complex and critical over the course of the semester. Our expectation was, at this early point in their teacher preparation program, that they would demonstrate instances of pedagogical reflection by the end of the semester. In subsequent semesters, we believe our TCs will continue to engage in increasingly complex reflection, including the critical level of reflection

### Cycle 1: Interactive Read Aloud

The first cycle of the reflective process was the first time most of the TCs had viewed themselves teaching. Research has shown that upon first viewing video of themselves, TCs are often overly concerned with their own perceived idiosyncrasies and do not focus as much on their teaching practice or the impact it has on their students (Sydnor, 2016). We found this to be the case with our TCs, as well. Therefore, we viewed this cycle as a practice for them and an unanalyzed portion of our study.

### Cycle 2: One-on-One Writing Lesson

Table 1 shows the levels of reflection across the four TCs' reflections written at the end of the second cycle, in which they each taught and recorded a one-on-one writing lesson with a K-6 student.

**Table 1** Cycle 2: Levels of Reflection After Viewing Video of Their One-On-One Writing Lesson

Teacher Candidate	Pre-reflection	Stretching to Surface	Surface	Stretching to Pedagogical	Pedagogical
Heidi	2	0	4	1	0
Caroline	0	0	2	2	0
Hannah	0	0	2	5	0
Melissa	0	0	4	2	0
Total	2	0	12	10	0

During this cycle, TCs had access to the rubric that would be used to assess their Final Reflection on Teaching (at the end of the semester), but they were not explicitly instructed to use it to guide their reflections. In her detailed reflective notes, Heidi wrote about one of the students, "...It was hard for him to write everything down. I'm not sure if this was because he just couldn't focus or if he just didn't want to take the time to write

everything down.” Heidi detailed the student’s reasons for not doing the assignment rather than considering how she might support him, as if no connection could be drawn between her actions as a teacher and student learning. She was, thus, using prereflection thinking, characterized by teachers who are “reactive, believing that situational contingencies are beyond the teacher’s control” (Larrivee, 2008, p. 348).

### Cycle 3: Guided Reading

Upon completion of Cycle 2, TCs conducted and video-recorded a guided reading lesson during the third reflection cycle. At the end of the cycle, following annotation, peer feedback, instructor feedback, and review and synthesis, the TCs wrote detailed reflective notes about their guided reading lesson. Prior to writing their detailed reflective notes, the instructor engaged the TCs in explicit minilessons, which included an analysis using the rubric, with particular attention paid to the progression between levels. Then, the instructor modeled the use of the rubric to assess sample written analyses exemplifying various levels of reflection. This step was followed by guided practice and finally an examination of their own written reflection from Cycle 2. The rubric and its use are described in more detail later in the article. Table 2 illustrates the levels of reflection present in the detailed reflective notes written at the end of this reflection cycle.

**Table 2** Cycle 3: Levels of Reflection After Viewing Video of Their Guided Reading Lesson

Teacher Candidate	Pre-reflection	Stretching to Surface	Surface	Stretching to Pedagogical	Pedagogical
Heidi	0	0	3	3	0
Caroline	0	0	3	3	0
Hannah	0	0	1	5	0
Melissa	0	0	2	3	1
Total	0	0	9	14	1

The TCs initially demonstrated surface level reflection and surface stretching to pedagogical reflection. One TC reflected at the pedagogical level. The excerpt that follows is an example of surface reflection. In Hannah’s written reflection of her guided reading lesson, she wrote,

During the independent reading time of the guided reading lesson, I showed the students how to whisper read and reviewed with them that they need to be reading independently before I get to them, not just watching me listen to their classmates read. I didn’t pay good enough attention though, because when I watched the video, I noticed that [Logan]

wasn't reading until I got to him. I need to watch all the students to make sure they're reading independently.

According to Larrivee (2008), surface level reflection is characterized by a "focus on strategies and methods used to reach predetermined goals" (p. 342). Hannah exemplified that focus when she described her modeling of the expected behavior but pointed out that one student did not meet that predetermined goal. Her focus was her implementation of an instructional strategy, modeling, and how her use of that strategy should allow all students to reach the teacher's predetermined goal of reading independently.

The concept of *stretching* (Daley et al., 2019) "acknowledge[s] TCs' movement toward more complex levels of reflection" (p. 55). During the third reflection cycle, Caroline demonstrated stretching from surface to pedagogical reflection when she wrote,

This was an essential part of the guided practice for students: to successfully read with expression. Because we practiced reading multiple sentences with dialogue, the students were able to listen to each other and look at the punctuation for clues on how the sentences should sound when they are read aloud.

In this example, Caroline demonstrated indicators of surface-level reflection when she acknowledged the parts of a guided reading lesson and her scaffolding of students toward success when reading independently. She approximated some practice indicators at the pedagogical level of reflection when she alluded to the impact of modeling. However, she did not reference or apply the "theories underlying approaches, and the connections between theoretical principles and practices" (Larrivee, 2008, p. 343).

#### **Cycle 4: Interdisciplinary Lesson & Final Reflection on Teaching**

After teaching, recording, viewing, and annotating their interdisciplinary lesson in the final weeks of the semester, TCs looked back at their written reflections from the second and third reflection cycles and synthesized their learning from all three cycles into a paper entitled "Final Reflection on Teaching." TCs were also provided with feedback from the instructor on their Cycle 3 reflections using the rubric. Again, as was the case with Cycle 3, they were instructed to use the rubric to guide and self-assess their written reflections. In the TCs' final reflections, there were more instances of pedagogical reflection, as displayed in Table 3.

**Table 3** Cycle 4: Levels of Reflection After Viewing Video of Their Interdisciplinary Lesson

Teacher Candidate	Pre-reflection	Stretching to Surface	Surface	Stretching to Pedagogical	Pedagogical
Heidi	1	0	2	2	3
Caroline	0	1	1	3	1
Hannah	0	0	4	6	0
Melissa	0	0	0	0	5
Total	1	1	7	11	9

Melissa, for example, wrote,

Assessing and building students’ background knowledge was another area in which I grew this semester. Background knowledge is vital to student learning because it gives students a base with which to connect new learning. In my interactions with my focus student, I learned about his personal experiences and interests. This helped me in my lesson planning because I was better able to understand his point of view and how to make meaningful connections for him. For instance, I learned that he was interested in the Navy, so when I did a word sort about long “a” sounds, I included the word “Navy.” This connection also helped him attach a value and importance to learning long “a” words because he could attach the rule with a word he knew and cared about.

Here, Melissa showed that she thought “about how teaching practices are affecting students’ learning and how to enhance learning experiences” (Larrivee, 2008, p. 348) by pointing out how she used the student’s interest in the Navy to engage him in phonics instruction.

### Looking Across Cycles

To understand how the complexity of the TCs’ reflections changed over the course of the semester, we conducted a frequency count of the levels of reflection across the three reflection cycles. These findings showed increases in complexity in each subsequent reflection cycle. Table 4 details the percentage of comments coded at each level of reflection across the cycles.

**Table 4** Levels of Reflection Across Cycles

Levels	Cycle 2: Writing Lesson	Cycle 3: Guided Reading Lesson	Cycle 4: Final Reflection on Teaching
Prereflection	8%	0%	3.5%
Stretching to Surface	0%	0%	3.5%
Surface	50%	37.5%	24%
Stretching to Pedagogical	42%	58.5%	38%
Pedagogical	0%	4%	31%

Early in the semester, 58% of reflections were prereflective and surface level: TCs were nonreflective or focused mainly on the technical aspects of teaching. As they progressed, their discussion became more supported by evidence from their experience, as well as theory, and research. For example, in Cycle 2 (one-on-one writing lesson), the analysis of the detailed reflection notes showed 0% of reflection at the pedagogical level. However, in Cycle 4 (the Final Reflection on Teaching), 31% of all instances of reflection were at the pedagogical level, which is a more complex reflection, as TCs explained how they enacted or would enact specific teaching moves.

## Discussion

This study underscores Larrivee's (2008) assertions that reflection is a complex developmental process that is not necessarily linear. She described the increasingly complex levels of reflection, ranging from prereflection (reactive and absent of teacher agency) to surface reflection (focused on the technical aspects of teaching) to pedagogical reflection (focused on teaching moves to reach all students using research and theory to support instructional rationales) to the most complex level, critical reflection (focused on promotion of democratic ideals and the ethical and social implications of teaching practice).

Along with Larrivee (2008) and others, we take the position that "even novice teachers can deepen their level of reflection with powerful facilitation and mediation within an emotionally supportive learning climate" (p. 345). We recognize the vital role teacher educators have in supporting TCs toward understanding, appreciating, and enacting critical reflection. Our findings indicate that providing TCs with opportunities to participate in multiple reflection cycles involving viewing and analyzing one's own teaching supports more complex reflection. This result was evident when we looked across cycles and saw that TCs' reflections became increasingly complex.

## **Implications for Practice**

To best support TCs to become critically reflective practitioners, we recognize the importance of selecting tools and teaching practices that provide a supportive learning environment. These appropriate tools and practices enable the facilitation of intentional conversations around videos of teaching to foster deeper analysis of teaching practices (Llinares & Valls, 2009; Sherin & van Es, 2009) and can lead to increasingly complex reflection (Larrivee, 2008).

In the sections following, we explain in more detail the affordances of the tools and practices we utilized in this study: video platform, rubric, and modeling. These tools and practices are also highlighted in images and videos located in the interactive overview of reflection cycles and tools (Figure 2). Foregrounding the reflection cycle and tools in this study helped us to recognize the potential of these practices in teacher preparation.

### **Video Annotation Platform**

A robust online video annotation platform, in this case GoReact! (<https://get.goreact.com/>), was useful in our pursuit of supporting critical reflection. The online platform allowed TCs to record or upload a video of their own teaching into a secure online “class” where it was viewed and shared with peers and instructors. Once uploaded, TCs could view and annotate the video using features of the platform that utilized time-stamping to make comments visible at critical moments.

When annotating, TCs were directed to focus their attention on both their teaching actions, as well as responses and actions of the learners. In addition to adding comments, TCs utilized the “markers” feature to identify strengths, evidence of student learning and engagement, and areas for improvement. The video platform (GoReact!) provided technical assistance in the form of live chats, instant messages, training videos, and so forth, for any TCs who needed this support. (See the video in Figure 2 for a more thorough description of the platform).

Notably, the video annotation platform was not used to assess the TCs’ teaching or reflection summatively. Rather, it served as a tool to allow TCs to examine their own practice. As TCs viewed and reviewed their recorded teaching episodes, they were able to examine their practice from the perspective of an outsider and engage in a “more complex and evidence-based analysis” (Rosaen et al., 2008, p. 349). The affordances of the platform that enabled TCs to develop increasingly complex reflection practice included time-stamped annotations, the opportunity to view critical moments multiple times, and the dialogic comments amongst the TC, peers, and the instructor.

### **Rubric as Assessment and Scaffolding Tool**

Rubrics can be useful in scaffolding reflection (Flores-Martí, 2013; Parks & Kajander, 2010; Ray & Coulter, 2008). As TCs responded to the prompt in their written reflections, they had access to a rubric (see Figure 5, as well



as the image in Figure 2). This rubric titled, Written Reflection on Teaching Rubric, was created to assess TCs' levels of reflection as well as to provide support as they reflected.

**Figure 5** Written Reflection on Teaching Rubric

**Written Reflection on Teaching Rubric**

Criteria	Level 1: Pre-Reflection	Level 2: Surface Reflection	Level 3: Pedagogical Reflection	Level 4: Critical Reflection
<b>Overall Analysis of Teaching</b> CAEP 1, 2	Describes problems simplistically or unidimensionally; is preoccupied with management, control, and student compliance; Does not support analysis with evidence from experience, theory or research.	Limits analysis of teaching practices to technical questions about teaching techniques. Supports analysis only with evidence from experience.	Engages in constructive criticism of one's own teaching. Supports analysis with evidence from experience, theory, and research.	Level 3, plus: Views practice within the broader sociological, cultural, historical, and political contexts
<b>Student Learning &amp; Differentiation</b> CAEP 1	General or broad statements about student performance are made with no evidence of specific student literacy performance/behaviors to support claims. Statements may not be linked to lesson objectives.	Some statements about student performance linked to lesson objectives are made with limited evidence of specific student literacy performance/behaviors to support claims.	Describes student performance linked to lesson objectives and supports claims with specific examples of student literacy performance/behaviors.	Level 3, plus: Describes the value of authentic student literacy behaviors in a larger social context.
	Does not identify instructional next steps for student(s). Fails to connect methods to experience, theory, or research.	Identifies general instructional next steps for student(s) based on student performance. Supports instructional decisions with limited connections to experience, but fails to connect specific methods to underlying theory or research.	Identifies specific instructional next steps for student(s) based on student performance. Supports instructional decisions with specific connections to experience, theory, and research.	Level 3, plus: Describes the value of authentic instruction in a larger social context.
<b>Areas for Growth in Next Lesson</b> CAEP 1, 2, 4	Fails to identify differing needs of learners.	Identifies opportunities and/or instances of limited accommodations for differing needs of learners.	Identifies some opportunities and/or instances of differentiated instruction to address differing needs of learners and strives to enhance learning for all students.	Level 3, plus: Challenges assumptions about students and expectations for students.
	Does not describe adjustments/improvements that could be made to teaching practices. Does not support analysis with evidence from experience, theory or research.	Describes adjustments/improvements that could be made to teaching practices but these are limited only to current situation. No mention of future teaching episodes. Supports analysis only with evidence from experience.	Demonstrates a commitment to continuous learning and improved practice by describing specific adjustments/improvements that could be made to teaching practices in future teaching episodes and beyond. Supports analysis with evidence from experience, theory, and research.	Level 3, plus: Acknowledges that teaching practices and policies can either contribute to, or hinder, the realization of more just and humane society; calls commonly held beliefs into questions.
<b>Utilization of Feedback to Improve Instruction*</b> CAEP 2	Views student and classroom circumstances as beyond the teacher's control; sees oneself as a victim or circumstances	Limited acknowledgment of the relationship between teaching practices and student learning.	Accepts responsibility for one's professional practice and learning outcomes. Analyzes the relationship between teaching practices and student learning.	Level 3, plus: Acknowledges the social and political consequences of one's teaching; considers the ethical ramifications of classroom policies and practices.
	Does not identify any utilization of feedback to improve instruction.	Utilizes constructive criticism from colleagues and/or self-reflection to improve instruction. General improvements are noted.	Successfully utilizes constructive criticism from colleagues and self-reflection to improve instruction. Specific improvements are identified in the teaching episode.	Level 3, plus: Enact change in one's teaching practice that impacts school/district/society's literacy instructional policy.

\*Some rubric rows adapted from criteria in Larrivee, B. (2008). Development of a tool to assess teachers' level of reflective practice. *Reflective Practice, 9*(3), 341-360.

The rubric was designed using Larrivee's (2008) *Survey of Reflective Practice: A Tool for Assessing Development as a Reflective Practitioner* as a framework and takes a developmental stance on reflection. The authors of the rubric used the increasingly complex levels that follow to guide them: prereflection (teacher's orientation is reactive), surface reflection (teaching methods limited to tactical moves), pedagogical reflection (teacher's goal is continual improvement of practice and reaching all students), and critical reflection (concerned with promoting democratic ideals and weighs the ethical and social implications of classroom practices; Larrivee, 2008, p. 348).

Although we used the rubric to assess the TCs' reflections, more importantly, the rubric served to make the expectations for reflection explicit. Too often, we found ourselves expecting TCs to know what we meant when we asked them to reflect on their teaching. And too often, we saw these assignments turn into rote exercises of recalling the teaching episode with little meaning for the TCs. Sharing and discussing the rubric with the TCs allowed them to examine carefully what makes reflection critical. This rubric has the potential to be helpful in a variety of classroom applications and assignments.

### Modeling by Teacher Educators

In the third and fourth reflection cycles of the semester, minilessons were used to provide modeling through the examination of explicit examples of complex reflection. In these minilessons, as described in the video

embedded in Figure 2, the instructor strategically selected anonymized excerpts from the written reflections submitted in the second reflection cycle. She displayed an excerpt and described the indicators of complex levels of reflection that were demonstrated.

Next, she engaged the TCs in guided practice examining and assessing additional excerpts to ensure shared understanding of the rubric through facilitating conversations. This approach provided an illustration for the TCs of critical reflection that focuses on these democratic ideals and the larger social and ethical implications of practice.

Our goal was to scaffold a path to critical reflection by providing a rubric, explaining the criteria for each level of reflection, modeling and offering guided practice recognizing the various levels of reflection, and engaging TCs in multiple reflection cycles for continued independent practice. When providing feedback to our TCs on their teaching, we frequently emphasized the importance of modeling. We also aspired to provide examples of modeling in our own teaching. Too often, however, we did not model how to reflect critically on one's practice. We imagine this is true for many teacher educators.

By making time for this practice in our study, we provided explicit and meaningful models of critical reflection on our own practice. Sharing our reflections on practice with our students allowed us to engage them in conversations as they carefully considered the characteristics of each level of reflection. We encourage the use of this rubric, along with explicit modeling, as a tool in supporting TCs' growth as reflective practitioners (Schön, 1983).

### **Implications for Research**

More studies are needed to discern the best practices in providing TCs experiences in their teacher preparation program to support their development as reflective practitioners. A limitation of this study was that the analysis was exclusively based on written reflections. Further analysis of other aspects of the work of TCs, such as video annotations, would have strengthened this study. Also, this study focused on four TCs' written reflections that followed reflection cycles 2 (one-on-one writing lesson), 3 (small group guided reading), and 4 (whole-class interdisciplinary lesson). The purpose of this sample size was not to answer questions like "how much" or to generalize findings. We presented them as critical cases that allowed us to show multiple perspectives of TCs negotiating their development as reflective practitioners.

Additionally, further studies are recommended to expand this study to other contexts. These types of studies would provide a more detailed picture of the affordances of the reflection cycle and test the replicability of this current study.

Furthermore, because these data were analyzed after the semester ended, we did not have the opportunity to share this information with TCs and ask them to analyze their own reflections. This study does, however, add to the body of literature on teacher reflection by highlighting useful tools

to scaffold TCs as they learn to understand, appreciate, and enact increasingly complex reflections on their own practice.

## **Conclusions**

We aspired to support the TCs' iterative reflective experiences and their development as reflective practitioners. This study helped us as teacher educators to create practical tools to use as we encourage our TCs to reflect in ways that have the potential to be transformational to their practice. Our findings shed light on the importance of making reflection explicit in teacher preparation programs and allowed us to see the need for future areas of research where we could explore the enactment of these practices in the classroom.

Likewise, we hope these tools and careful explanations of their use may be helpful to other teacher educators in the field. This study offers a glimpse of what is possible when faculty members prioritize the time and resources to develop aspiring teachers who strive to understand, appreciate, and enact critical reflection. To realize this vision, the faculty must reimagine the curriculum to include teaching reflection as part of the preparation of teachers who will be successful in these educationally challenging times.

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