The Cognitive Apprenticeship Model, Backchanneling Technology, and Reflection in Early Clinical Experiences: A New Practice for Field-Based Courses in the Professional Development Schools

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Abstract: Teacher preparation programs have historically experienced logistical and epistemological struggles in implementing earlier clinical experiences, despite the value placed on reflective practice in early clinical experiences. To address this issue, the author, a university faculty member, partnered with a Professional Development School (PDS) to design a new PDS practice before the clinical experience. The new practice grounds itself in the Cognitive Apprenticeship Model (CAM) and backchannel technology in order to emphasize the implementation of this teaching theory into practice.

The practice uses a field-based social studies methods course to co-observe in-service teachers. Students observe with their classmates and their methods instructor, who serves as a teaching coach to the pre-service teachers. The coach uses backchannel chat technology (group text discussions) to orient, in real-time, the pre-service teachers' attention to the in-service teachers' pedagogical choices. This encourages pre-service teachers to embark in metacognition, reflective practice, and a real-time conversation surrounding clinical practices. After the observation period, the in-service teachers attend the methods course with the pre-service teachers and engage in the class discussion to further explicate their practice. This innovative use of technology, observation, and cooperation between the Institute of Higher Education (IHE) and the PDS facilitates scaffolded experiences of clinical practice through authentic learning in the PDS.

KEYWORDS: backchannel, clinical practice, cognitive apprenticeship, preservice teachers, Professional Development Schools, teacher preparation, technology integration

NAPDS NINE ESSENTIALS ADDRESSED:
2. A school–university culture committed to the preparation of future educators that embraces their active engagement in the school community;
4. A shared commitment to innovative and reflective practice by all participants;
5. Engagement in and public sharing of the results of deliberate investigations of practice by respective participants; and
8. Work by college/university faculty and P–12 faculty in formal roles across institutional settings

Effective Professional Development School (PDS) partnerships emphasize the implementation of teaching theory into practice through the use of deliberate and reflective analysis of best practice (Brindley, Field, & Lessen, 2008). Education preparation programs (EPPs) have long recognized the significant role of reflection in teacher preparation. Reflection

supports the creation of the specialized body of professional knowledge necessary to the profession of teaching (Dewey, 1910, 1916; Schön, 1983, 1987; Shulman, 1986). PDS partnerships should help support this critical skill of reflection; however, as the PDS movement has grown, the implementation and use of PDS has at times become diluted (Brindley et al., 2008).

One of the biggest obstacles to reflection in PDS is the structure of teacher preparation programs themselves (Chepyator-Thomson & Liu, 2003; Kim & Silver, 2016). Teacher preparation programs have accepted and adopted the belief that reflection is critical to professional knowledge and professional identity, but they continue to fail at providing frequent and meaningful clinical-based experiences for reflection (Chepyator-Thomson & Liu, 2003). Despite the growth of the PDS movement, students still spend the majority of their first three years of coursework on campus and then suddenly are thrust into the position of pre-service intern in a PDS for their professional year (Chepyator-Thompson & Liu, 2003). Pre-service interns may demonstrate a disconnect between their theoretical studies and the practical application of their studies (Previts, Kleine, & Mizelle, 2013; Zeichner, 2010). While methods exist which mirror the authentic experience of clinical practice (Colbert, Trimble, & Diesberg, 1996), due to time constraints and the need for a reflective skill set in place before the practice begins, it remains difficult to place pre-service teachers in more frequent and meaningful clinical settings (Troyan, Davin, & Donato, 2013).

A solution to the lack of skill development offered to pre-service teachers under the current model may lie in encouraging students to think like teachers before they are asked to assume the identity and role of teacher in their professional year. Teacher preparation programs have attempted this solution through a series of different methods, including action research projects, case studies and ethnographic studies of students, microteaching, and other structured curriculum tasks (Hatton & Smith, 1995). What practitioners have not tried is extensive, field-based practice in the PDS, completed before the full-time internship experience, and using technology to support the Cognitive Apprenticeship Model (CAM).

This new PDS practice utilizes technology embedded in field-based methods courses, offered in partnership with a PDS, prior to the internship experience. The practice provides opportunities to deepen the PDS partnership, develop the metacognitive skills of pre-service teachers, and cultivate a bridge between theory and practice. It affords pre-service teachers the opportunity to experience authentic and meaningful interactions with master teachers and P-12 students. This paper explicates this novel PDS practice designed to address the gap in teacher preparation, in particular the need for more frequent opportunities for reflection in clinical settings. The practice is grounded in the design tenets of the Cognitive Apprenticeship Model (CAM), the essential components of a PDS (Brindley et al., 2008), and the objective is to infuse reflection, clinical practice, and technology into the traditional PDS partnership.

Review of the Literature

Reflection and PDS partnerships as a best practice necessary for effective teacher preparation has become widely accepted and established in the field of education (Brindley et al., 2008; Etscheidt, Curran, & Sawyer, 2012; Grossman, 2008; Ostorga, 2006; Schön, 1987) and are considered the first step in building professional knowledge (Clarke & Hollingsworth, 2002; Kim & Silver, 2016). Professional accreditation standards have adopted reflection as a key component in effective teacher education programs (Interstate Teacher Assessment and Support Consortium,

2011; National Council for Accreditation of Teacher Education, 2008). This reform of teacher preparation to include reflection and PDS evolved as a reaction to the critique of teacher preparation programs as perpetuating an unacceptable status quo of ineffective pedagogy and poor performance outcomes (Gordon, 1985).

Field Based Teacher Preparation Courses

Reflection as defined by Schön (1983, 1987) needs a "text" of authentic experience. It cannot fully exist without the clinical experience of the pre-service practicum. While teacher preparation programs recognize the need for more clinical experience (Troyan et al., 2013), the difficulty in providing more opportunities for these experiences is two-fold. First, preparation coursework may involve scheduling dilemmas. Traditionally, pre-service teachers take preparation courses in order to ready them for their final year of clinical practice (Troyan et al., 2013). These courses often follow a rigid three semester sequence, leaving little flexibility to include clinical experiences during this time.

The second problem dates back to the critiques of earlier apprenticeship models during the clinical experience – those that encouraged replication, not thoughtful application, of a supervising teacher's methods (Zeichner, 1992, 1996). If the pre-service teachers participate in a clinical experience earlier in their educational careers, they do not have the adequate coursework before the clinical experience in order to facilitate effective reflection. Thus, they are ill-prepared to reflect and analyze on the experience. The effectiveness of the clinical experience is lost. Yost, Sentner, and Forlenza-Bailey (2000) call for more clinical experiences in teacher preparation programs that also allow for deep reflective practices.

Building Metacognition Using the Cognitive Apprenticeship Model

Pre-service teachers need to develop reflective practice and the ability to shift thinking practices from novice to practitioner (Clarke & Hollingsworth, 2002; Henry, 2016). They also need a master guide to help them understand what it is they are seeing in the classroom and to help them understand upon what, specifically, they should be reflecting (Loughran, 2002; Rakap, 2017; Zeichner, 1992, 1996). An effective pedagogical approach to address these needs is through a Cognitive Apprenticeship Model (CAM) grounded in the theory of Practice Fields (PF).

CAM considers the organic steps of learning in a traditional apprenticeship as observed by Lave and Wenger (1991) and systemetizes them into a design model, a more formal process which can be transferred to different settings. Lave and Wenger (1991) observed the transfer of knowledge and skills from master tailors to apprentice tailors and noted the process and steps of this transfer. Collins, Brown, and Holum (1991) noted that traditional apprenticeships, like the tailors described by Lave and Wenger, revolve around the transfer of observable and tangible skills; however, in some fields, the knowledge is "hidden" and unobservable. The thinking processes of the master remain obscured from the apprentice. Collins et al. (1991) suggested that the thinking be made visible so that the learner can begin to use similar patterns in her own thinking. To do this, Collins et al. (1991) propose the following process of cognitive apprenticeship:

1. identify the processes of the task and make them visible to students;

2. situate abstract tasks in authentic contexts, so that students understand the relevance of the work; and
3. vary the diversity of situations and articulate the common aspects so that students can transfer what they learn. (p. 9)

Part of making the invisible, visible, hinges on the ability of the coach to foster reflective practices in the learners by modeling the cognitive activity for the learners (Barab & Duffy, 2012). The coach models the thinking while working through a problem. Following this modeling, the coach leads the students through a complex, dynamic, and iterative process (McAlpine et. al., 1999) to identify strategies used to solve the problem (Schoenfeld, 1996).

However, in order to solve a problem, students must realize that a solvable problem exists in the first place. The problem must be made known to them (Loughran, 2002) and framed so that it might be seen from multiple perspectives. Once the problem is framed, students need guidance in *reflecting* on the problem, as opposed to *rationalizing* the problem (Loughran, 2002). *Rationalization* reinforces existing power structures and assumptions about students as the obstacles to learning. *Reflection* encourages examination of power and hegemony and reframes problems as within the practitioner's control (Loughran, 2002). It should lead to new ways of seeing. In a cognitive apprenticeship, the coach models and helps frame this process, so that learners can internalize this habit of mind (Cornish & Jenkins, 2012).

When the Cognitive Apprenticeship model (CAM) has been used in teacher education, it has been used during the student teacher's clinical experience (Kopcha & Alger, 2014). Since the cognitive apprenticeship assumes a clinical practice field in which to model tacit and invisible thinking, the natural place for this type of learning occurs during the clinical experience and tends to focus on the relationship of the mentor teacher and the student intern (Kopcha & Alger, 2014; van Velzen & Volman, 2009).

Technology to Support CAM

Current research focuses on the use of technology to support CAM during the clinical experience. In particular, it focuses on the ways in which the mentor and the university supervisor can foster reflective practices in the student intern (Kopcha & Alger, 2014). Often this entails email or Learning Management System support (Kopcha & Alger, 2014). Since there is a demand in teacher preparation programs to expose pre-service teachers to the field in advance of their clinical experience (Chepyator-Thomson & Liu, 2003), there have been attempts to utilize CAM before the clinical experience through videos of master teachers and guided discussion of the teachers' practices (Liu, 2005). However, utilizing video and encouraging reflection references Case Based Instruction more than CAM. While both methods of instruction value reflection, CAM differentiates itself by focusing on making the invisible, visible, through the use of modeling by a coach or expert.

The advent of mobile technology and the ubiquitous nature of devices has led to backchanneling as another pedagogical possibility to make the invisible, visible. Backchanneling refers to the use of technology to host a conversation about an event, while experiencing the event (Fredrick, 2013). This conversation may occur over social media, or through private texts and messages (Jarret & Devine, 2010). The technique allows users to engage their voices in the larger conversation. It also encourages students to support one another (Husbye & Elsener, 2014) as they reflect on the message of the event. Currently,

backchanneling has not been utilized in the literature as a tool to support pre-service teacher reflection.

Problem Statement

Meaningful reflection is critical to effective teacher preparation (Etscheidt et al., 2012; Grossman, 2008; Ostorga, 2006; Schön, 1987). This reflection should be a metacognitive consideration "of action" and "on action" (Schön, 1983, 1987) via multiple modalities and opportunities (Etscheidt et al., 2012). This type of teacher preparation leads to more effective teaching and the development of a professional capacity to shift thinking from novice to practitioner (Clarke & Hollingsworth, 2002).

Teacher preparation programs have attempted to develop reflective practice using case based analysis learning designs; however, the literature points to a need for more authentic experiences throughout the teacher preparation program (Etscheidt et al., 2012; Troyan et al., 2013). However, students still lack meaningful clinical experiences before their internship experience in a PDS. EPPs have struggled to simultaneously develop the skills of reflection and provide earlier, authentic, clinical experiences. This dilemma leads to the following question: *How can teacher preparation programs support the development of teacher reflection on practice? Specifically, how can they:*

1. *Provide earlier, more meaningful, clinical experiences;*
2. *Make visible the hidden cognitive processes of experts in the field;*
3. *Facilitate reflection "in action" and "on action" (Schön, 1983, 1987);*
4. *Connect theory and practice?*

PDS partnerships are intended to offer a solution to these issues, as evidenced by the nine essential components of *What it Means to Be a Professional School* (Brindley et al., 2008). Unfortunately, though the literature calls for reflection in more frequent clinical settings, EPPs have not yet consistently partnered with PDSs to address this call for early clinical experiences.

Learning Design Model: PDS, CAM, and Technology

CAM, using backchanneling between the pre-service teachers and the methods instructor, provides a potential instructional design solution to this dilemma. This model uses digital backchanneling in a CAM to examine the potential of a field-based middle school methods course to encourage pre-service teacher reflection in an authentic, PDS, setting. The PDS CAM has the overall goal of developing reflective practice. To develop the reflective practice, the methods instructor assists in modeling the invisible thought processes of the master teacher in the PDS. The methods instructor also facilitates students' ability to make connections between theory and practice.

In order to meet the need to place students in the field earlier in their experience and to encourage reflective practice before the clinical experience begins, the learning design for this research utilizes CAM in a field-based methods course. The course meets out in the field in a PDS middle school, and for the first 45 minutes of the course, the pre-service teachers and the methods instructor observe a middle school classroom. In the past, during this observation period, the pre-service teachers were given a list of "look-fors" so that the gaze of the pre-service teachers could be appropriately oriented toward the invisible work of the teacher. However, this list fell short in helping pre-service teachers identify problems and hone in on important

pedagogical and management decisions made by the master teacher in the PDS.

The pre-service teachers would leave sections of the observation form blank because they could not see the connections between the in-service teacher's pedagogical methods and the pedagogical theory that the pre-service teachers were learning in class. The pre-service teachers also remarked regularly on student behavior, but they could not identify how the teacher addressed the student behavior. For instance, the pre-service teachers were all able to identify which students were off task, but the pre-service teachers could not identify techniques the in-service teacher utilized to re-engage off task students. This reinforced *rationalization* (Loughran, 2002), including remarks from pre-service teachers that learning issues resulted because "It is the student's 'fault'" as opposed to *reflection* such as, "The practitioner has the ability to negotiate a solution." Since the pre-service teachers could not see the invisible processes of the in-service teachers, the pre-service teachers were also unable to make connections between the theory and the practice occurring in their midst.

Learning Objectives

Thus, to further develop the guided reflective practice, the methods instructor developed the new PDS practice, grounded in CAM design, to help model the invisible thought processes of the master teacher as well as to encourage students to make connections between theory and practice. In order to do this, pre-service teachers must be able to "see" the hidden cognitive processes of experts in the field. They also need to learn to reflect both "in action" and "on action" (Schön, 1983, 1987). Another goal of pre-service teaching, and of effective PDS partnerships, is to connect the theory that students have learned in classes with practice that they observe, and eventually act upon, out in the field. While the coach will begin this process, the pre-service teachers will gradually begin to moderate and lead these discussions. Finally, pre-service teachers need to develop a professional identity earlier in their pre-service career.

Audience

The learners making the connection between theory and practice are the pre-service teachers who have not yet begun their full time practicum. Once they enter their full time student teaching, these pre-service teachers will spend a significant portion of their time reflecting on practice (Kopcha & Alger, 2014). They should enter that experience more prepared to reflect on practice and with a more comprehensive understanding of the invisible cognitive processes of an effective teacher.

CAM, PDS, and Technology: Description

A practice field focuses on cognition of students in an artificial setting which replicates a real-world authentic environment (Barab & Duffy, 2012). A particular style of practice field, the cognitive apprenticeship, encourages a coach or mentor to model a style of thinking (Barab & Duffy, 2012). In the middle school methods practice field, the students are learning to teach by observing and practicing in a pseudo-teaching environment. The mentor or coach is the methods instructor who encourages students to embark in metacognition by highlighting the in-service teachers' pedagogical choices, and then encourages the pre-service teachers to consider why the

pre-service teacher made those particular choices.

The CAM utilizes a three-part model to make visible the invisible processes of a practice (Collins et al., 1991). First, the process must be made known to the students (Collins et al., 1991). A coach or mentor makes the students aware that a problem exists (Loughran, 2002) and frames the problem, not as an issue that needs rationalizing, but instead, needs reflection (Loughran, 2002). This leads to the second part of the process in which the mentor situates the problem in an authentic context (Collins et al., 1991). This helps the learner see the relevancy of an action or actions (Collins et al., 1991). It also reframes the problem as within the practitioner's control and leads to new ways of seeing (Loughran, 2002). Finally, as the apprentice sees the problem, understands the context of the problem, and begins to feel empowered to reflect and utilize processes to work through the problem, the last stage of the CAM occurs when the learner can transfer this understanding to a different situation.

The first step of this process, making the problem visible, occurs during the 45-minute observation period. However, instead of utilizing the failed observation form from the previous semester, the CAM mentor now uses backchanneling to make the problem visible. This backchanneling, or the phenomenon of sharing information with others while simultaneously involved in an event (Fredrick, 2013), accesses the affordances of mobile technology to reflect using Schön's (1983, 1987) "in" and "on" action. In this example, the mentor and the learners access backchannelchat.com across their mobile devices, in order to unobtrusively reflect on the in-service teacher's decisions in real-time. However, there are similiarly functioning backchanneling tools available online or through applications for mobile devices. The methods instructor highlights certain decisions of the master teacher, thus identifying problems for the learners, and then facilitates and encourages the pre-service teachers' engagement in conversation, reflection, and questioning of the choices of the master-teacher. The backchannel also leaves a trail of data, which both the learners and the coach can mine in order to measure growth and understanding of theory, practice, and reflection.

In the second part of the CAM process, the coach or mentor situates the abstract tasks into authentic contexts (Collins et al., 1991). This frames the problem from multiple perspectives and allows students to consider multiple solutions (Loughran, 2002). Since the methods class observes a middle school social studies teacher in an authentic classroom located in the PDS, the learners see the processes in the most authentic environment. Though they themselves are not yet in a clinical experience, the learning design model prepares them for that clinical experience. Using the PDS model, learners access the clinical field. Then, using technology, the methods instructor models reflective practices in real time. Once the coach orients the novice teachers' attention to the hidden practices, the coach backchannel texts the other learners and asks reflective questions such as, "What is the teacher doing, pedagogically, to address the problem?", "Notice the teacher's management strategy for negotiating this situation. What do you see her doing?" The coach guides the learners' gazes toward relevant processes occurring in the classroom, then asks the learners to reflect on what they are seeing and to make connections to the theory they have learned in their education classes.

Finally, the last component of the CAM occurs when the learners can transfer the knowledge they have learned (Collins et al., 1991). This transfer occurs by varying the diversity of a situation (Collins et al., 1991). In this learning design model, the coach scaffolds the reflective process, leading to a gradual transformation for the learners from guided reflection to active reflection. Eventually, the learners lead the backchannel discussions, as the class observes

different social studies classes in different settings.

An effective way to support effective reflection on practice is through the grounded design of a PDS CAM which encourages reflective thought. The CAM is utilized before the full-time clinical experience, but it is still able to access a genuine field based experience, because the experience occurs in a PDS based methods course. Instead of a mentor teacher or university supervisor serving as the coach, the methods instructor serves as the "expert thinker" who models the hidden cognitive processes of the classroom teacher and helps to identify and frame problems with in the classroom.

Project Assessment

This learning design model was useful to immediately orient pre-service teacher attention toward management, teachers' instructional choices, teacher reflection, and praxis. It helped to deepen pre-service thinking about teacher choices. The archived discussions were helpful for students to use as reference for growth. Sometimes, the technology got in its own way, because the PDS' internet slowed and had a firewall. Sometimes the software overloaded if there were too many users at once.

Since the project contains multiple learning goals, the assessment utilized several tools for data collection. In order to assess how effectively students were able to "see" the hidden cognitive processes of teachers, how effectively students were able to note a theory put into practice, and to exercise their own reflective abilities in action, students completed weekly journals. Student journals noted the

a. cognitive processes that they saw in the day's lesson which they would not have seen without the observation and back-channeling,
b. times that they observed a specific theory they learned being put into practice,
c. an alternative method to either teacher or manage a situation from the day's class as supported by a specific theory.

Journaling served two purposes. First, the journal acted as a formative assessment for learning, since journaling encourages reflection (Cornish & Jenkins, 2012). It also served as an assessment of learning so that the instructor could shift instructional practices based on how frequently and effectively learners noted processes, theories, and praxis.

The instructor also used the backchanneled conversations as formative assessment tool. The backchanneled conversations were saved on the learning management system. This afforded the instructor the opportunity to review the conversations in order to observe and analyze trends in student reflection and learning. The instructor shifted questioning techniques based on student responses in the backchannel chats.

The backchannel chats included conversations focused on instructional planning. For example, when discussing a teacher's PowerPoint slides:

STUDENT A: I like how she has the objective written on every slide
PROFFESOR: Yes - what purpose would that serve - having the obj on each slide?
STUDENT B: The students are able to see that what they are doing will relate back to that objective in some way
STUDENT C: So the students are aware of what they are trying to accomplish
STUDENT A: The students know exactly where the lesson is heading. It may act as a guide for them

Sometimes the chats helped illuminate praxis. The following chat demonstrates this type of reflective conversation:

> STUDENT A: station activities promote cooperative learning
> STUDENT B: Stations are a great form of inquiry based learning
> STUDENT C: now it appears the more students are working individually and only collaborating with peers once they answered their question
> STUDENT D: Student centered learning is all the rage now
> PROFESSOR: @Student_D, can you talk a little bit more about that? Why do you think that is?
> STUDENT B: Students learn from one another and have fresh insight to give each other
> STUDENT E: I think it has to do with the generation of the students now. Student centered learning is all the hype because now they've discovered that students learn better when being able to do the work themselves with the opportunity to socialize with their peers
> STUDENT A: They become active participants in their own learning
> STUDENT D: Student centered learning has the student as the CENTER of the lesson. The teacher needs to plan a lesson that caters to the development and learning levels of their students. The most important part of a lesson is asking yourself as a teacher, "are my students meeting the objectives and how can I help my students meet those objectives"
> PROFESSOR: @STUDENT A, @STUDENT B, and @STUDENT D - I think, too, that it is grounded in a particular theory of learning as well. We didn't just wake up one day and say - it would be fun and beneficial to make students the center of learning!

Another interaction also demonstrates the way that live backchannel chat facilitated discussion about the implementation of Bloom's Taxonomy in practice:

> PROFESSOR: Think about our lesson last week and how you can organize the study of world history/cultures. How might this lesson fit into that structure?
> STUDENT A: In terms of learning theory – I think that the worksheet is set up in a way that scaffolds the student's thinking and guides them as they prepare to watch the film and as they watch the film.
> PROFESSOR: Yes! Can any of you weigh in on how the worksheet is structured in terms of Blooms Taxonomy and content?
> STUDENT B: The worksheet breaks down the key words and phrases the students have to understand. Then as the assessment the students have to take what they understood from the word and phrases and apply it to the importance of trans-Saharan trade.
> STUDENT C: The worksheet itself shows Blooms because it starts with knowledge questions and at the end has moved up to the analysis question.
> STUDENT D: Building off what STUDENT A, B, and C, said, the summary question is very effective. It is asking the student to compare and contrast modern day trade in the Saharan to traditional trans-Saharan trade. Helping the student pull knowledge from different areas to form their own ideas.

Sometimes the chats focused on management, like the following:

> PROFESSOR: Kid in back by STUDENT A is not doing the work. What strategy did the

teacher use to try and get him involved? Was it successful?
STUDENT B: He just encouraged him to do the work and told him that he wasn't going to help him if he couldn't help himself. Student is still resistant but picked up his pencil and started writing a little bit
STUDENT C: He said I'm not going to help you if you don't help yourself but it seems the students is still resistant like STUDENT B said
PROFESSOR: What else could a teacher do in this situation? "Passive resistance" in students is a common problem.
STUDENT B: I think the students can't play the war game if they aren't done with the worksheet right?
STUDENT D: In order to know how to address the passive student I think we need to know more. Is the student disengaged because they do not understand the content? Is it something else?
PROFESSOR: @STUDENT_D, great point. Speaks to a need to individualize your instruction and get to know your students.

Sometimes the chats could be used to illuminate the balancing of management and learning. For instance in the following chat, the pre-service teachers dissect the hidden work of the in-service teacher they are observing:

STUDENT A: She's really on top of time management with the students.
PROFESSOR: Look at all of the things that she is balancing right now: PBIS initialing, student wanting to turn on the fan; still running a meaningful discussion.
STUDENT B: She's giving out "PBIS Points" because students were responsible, prepared, respectful, and so on. A great way to reinforce correct behavior for all students.
STUDENT C: She definitely seems like the type of teacher who is understanding of student needs/problems.

In another instance, the pre-service teachers discussed how the in-service teacher managed the class during a brief video:

PROFESSOR: Another thing to consider: Social studies has a lot of great opportunities to show meaningful videos/visual media. What do you like and what might you do differently if showing this film? What is the teacher doing to facilitate the best understanding of the movie?
STUDENT A: She fast forwards the movie to the important parts.
STUDENT B: I'm pretty sure almost every student is watching!
STUDENT C: Maybe for a different approach with the film, she could pause after an important scene and have a brief class discussion based around it.
STUDENT D: Given the cultural diversity in this class, this video can definitely be a way for students to connect their cultural backgrounds to what they are learning.

Another discussion centered on the teacher's practices when guiding a discussion. The pre-service teachers noted how engaged the students were. That prompted the following backchannel conversation:

STUDENT A: She asks a lot of good guiding questions to the class. She's having more

of a conversation with the class.

STUDENT B: Yeah, she seems really competent at guiding class participation.

PROFESSOR: Ok, so WHY is she competent? What is she doing to guide her discussion well?

STUDENT A: She's knowledgeable about the content and is able to ask guided questions on the spot depending on student answers.

STUDENT C: Her knowledge goes deeper than just the movie. She has a clear understanding of the culture's values and their impact on the world.

STUDENT D: She is a competent guide because she asks the students to talk beyond the content on the paper. She uses the discussion to help students gain more context on the info/forces them to think critically about the content.

This new PDS practice has also encouraged a closer relationship between the university and the PDS partner. The in-service teachers debrief with the social studies methods class, and the pre-service teachers have an opportunity to ask the in-service teachers about intentional pedagogical choices evidenced in the lesson. The pre-service teachers are able to ask questions specifically related to their reflections on the earlier teaching.

Conclusion

PDS partnerships help develop teachers' ability to connect theory to practice (Brindley, et al., 2008). A useful way to meet this goal is through the grounded design of a CAM which utilizes backchannel technology to encourage reflective thought. The CAM occurs before the clinical experience, but because of the PDS partnership, it is still able to use a genuine field based experience. Instead of a mentor teacher or university supervisor serving as the coach, the methods instructor serves as the "expert thinker" who models the hidden cognitive processes of the PDS partner classroom teacher and helps to identify and frame problems with in the classroom. This new application of both the CAM and the field based methods course within the PDS partnership leads to deliberate and reflective analysis of best practices of teaching and learning. It supports pre-service teacher candidates' reflective skills while simultaneously supporting pre-service experience in a clinical setting.

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