

## Inquiry into the Reflective Practice of Teacher Candidates

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### Abstract

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*Tools for assessing teacher candidates have evolved from subjective observation of candidate performance in the classroom to a more authentic assessment of teaching practice. Assessment of teacher knowledge in today's arena of high-stakes testing and high-accountability must align more closely with assessing how teachers impact student learning, and how teachers utilize reflection to improve practice. Argyris and Schön (1974), imply that teacher quality involves more than rules and surface level experiences, but also includes reflective practice as evidenced in the double-loop learning process. Additionally, Eilertsen and London's (2005) description of learning included the triple-loop process. The purpose of this study was to determine whether the reflections of teacher candidates on their teaching is indicative of a single-, double- or triple-loop learning process. The methodology included two focus groups comprised of teacher candidates at the conclusion of their student teaching experience. An examination of the reflections of candidates who completed an e-portfolio (Focus Group I) and the reflections of candidates who completed the Teacher Performance Assessment (edTPA) (Focus Group II) was conducted. Interview data from Focus Group II suggests the edTPA fostered stronger capacity for reflective practice as evidenced in a preponderance of double- and triple-loop learning patterns. The findings suggest that the use of the edTPA increases candidates' opportunities to be introspective thus cultivating a professional awareness through reflective practice.*

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**Keywords:** teacher candidates, reflective practice, portfolios, Teacher Performance Assessment (edTPA), single-, double-, triple-loop learning

As teacher educators and former classroom teachers, we recognize the complex, multi-faceted nature of teacher knowledge. In our roles as teacher educators, we are challenged to capture and assess the emerging knowledge of our teacher candidates. Assessment of candidates' knowledge in most teacher education programs has witnessed an evolution over the years from assessing what teacher candidates can *do* in a behavioral sense, to assessing the reflective capacity of what they *know*. Tools for assessing teacher candidates have also evolved from subjective observation of candidate performance in the classroom to a more authentic assessment of teaching practice through the use of portfolios. Portfolios once adequately served as evidence of candidates' abilities to document their teaching. However, portfolios were often limited in their ability to capture candidates' critical reflection. Assessment of teacher knowledge in today's arena of high-stakes testing and high-accountability must align more closely with assessing how teachers impact student learning, and how teachers utilize reflection to improve practice.

The important role of new teachers to increase P-12 student learning outcomes challenged teacher education programs to redesign their curriculum and to develop new assessment tools for evaluating the effectiveness of teacher candidates in P-12 classrooms.

Increasingly, schools and colleges of education are focusing on authentic assessments of how teacher candidates develop and evaluate student learning. Although assessment through portfolios provided a glimpse of candidates' knowledge of teaching and learning, the results of their portfolio submissions provided little evidence of their impact on student learning. The educational Teacher Performance Assessment (edTPA) represents a shift as the first nationally available, research-and-standards-based support and assessment program that can serve as a common and external measure of candidate performance and teacher quality (AACTE, 2014). The edTPA is a multiple-measure assessment of teaching that addresses planning, instruction, assessment and the analysis of teaching. The edTPA was designed to foster a deeper understanding of the context of teaching by promoting on-going reflection and by using student assessment data to inform instructional decisions. It includes unedited video recordings of the candidate teaching and examples of teaching materials (plans, teaching tools, assignments) that demonstrate how the candidate planned instruction, adapted it for diverse learning—attending both to subject specific learning and the development of academic language and assessed student work (Darling-Hammond, 2006). Reflective commentaries are utilized throughout the edTPA. The collection of teacher and student artifacts is based on a planning, instruction, assessment, and reflection model. This model is distinct in its placement of student learning at the center of the assessment system.

The transition from using an electronic portfolio for candidate assessment to the edTPA, at this institution, provided an opportunity to examine the effects of these two instruments on candidates' capacity to reflect. Previously, the college utilized an electronic portfolio instrument designed to engage students in the process of reflection. The electronic portfolio provided a place to store artifacts aligned to the teaching standards created by the college. Teacher candidates wrote supporting statements and provided a rationale for each artifact. While students were engaged in reflective practice through the use of this e-portfolio, the process tended to fulfill course requirements and did not promote the level of reflective thinking as anticipated. The edTPA has a stronger focus on the context of teaching and the recursive relationship between assessment and instruction. Opportunities for reflection are woven consistently throughout all three tasks in the edTPA (planning, instruction, and assessment). The edTPA was designed to support candidate learning and provide data that support program improvement. Aligned with Common Core State Standards and inTASC Standards, edTPA assesses teaching behaviors that focus on student learning. The edTPA process identifies and collects subject-specific evidence of effective teaching from a learning-segment of 3-5 lessons from a unit of instruction for one class of students. Candidates' evidence is evaluated and scored using 15 analytic rubrics on a five- point scale focused on student learning within five dimensions of teaching. The five dimensions of teaching include planning instruction and assessment, instructing and engaging students in learning, assessing student learning, analysis of teaching effectiveness and academic language development (edtpa.aacte.org, 2014). Ultimately, the edTPA is designed to lead to more productive conversations about teaching practice and to focus candidates' attention on students.

### **Theoretical Framework**

In response to concerns about teacher quality and student learning, this mid-southern state university began the process of redesigning their teacher preparation program through the introduction of the edTPA. This redesign included an emphasis on reflective practice. To develop a better understanding of the concept of reflection, we turned to the work of John Dewey, who recognized that individuals *reflect* on a whole host of things in the sense of merely *thinking about* them. However, Dewey (1933) emphasized that *logical* or *analytic* reflection can happen only when there is a real problem to solve. Dewey saw true reflective practice as taking place when an individual faces a real problem that needs to be resolved in a rational manner. Dewey (1933) suggested that reflection begins with a *felt difficulty* that can range in intensity from mild uneasiness to intense shock. To address this sense of unease, Dewey suggested individuals must proceed through three steps of reflection: (1) problem definition, (2) analysis, and (3) generalization. He distinguished between action based on reflection and action that is impulsive or blind. He placed emphasis on the need to develop certain attitudes of open-mindedness and skills of thinking and reasoning in order to reflect. For Dewey, a fundamental purpose of education is to help individuals acquire habits of reflection so they engage in intelligent action.

Recent emphasis on the need for reflective practice saw a shift from Dewey's perspective of reflection as intelligent decision-making to reflection as a tool for professional development, which was inspired in part by the work of Donald Schön (1987). Schön believed that reflection can take place throughout an individual's career and is a crucial aspect of the process by which beginners in a discipline improve their practice. Schön proposed that in preparing professionals, educators must guide students in making decisions under conditions of uncertainty.

Dewey and Schön, emphasized that reflecting on significant episodes in professional practice is essential to the development of professional judgment. During the clinical teaching semester, teacher candidates encounter many significant episodes that are difficult to resolve. These episodes or instances become critical because they cause the candidate to pause, think back, and consider outcomes.

Dating back to 1974, research suggested that a teacher's ability to reflect enhanced the teacher's capacity for professional decision-making that resulted in positive change. Argyris and Schön (1974) implicitly addressed teachers' abilities to effectively a) reflect on current knowledge bases, including strengths and growth areas, b) adjust their learning accordingly, including learning more or learning different concepts/techniques, after their reflection, and then c) transfer that knowledge to positively affect classroom teaching and learning. Candidates who formatively assess their own progress, or lack thereof, and make necessary adjustments to any of the myriad components that comprise their practice, potentially possess greater capacity to be more successful educators.

Argyris and Schön (1974) synthesized and articulated the capabilities for reflection as "single-loop" and "double-loop" learning processes. They indicated that generally, individuals who exhibit single-loop learning were found to be less capable of adjusting their behaviors based on reflection. According to Argyris and Schon, single-loop learning identifies how gaps between action and outcome might be closed through changes in the intensity, rate, or manner of behavior used to achieve a goal. They also emphasized individuals who display single-loop learning desired different outcomes, but failed to find new ways of adapting their behaviors to obtain their desired outcomes. Conversely, according to Argyris and Schon, individuals who display double-loop learning exhibit capabilities to change behaviors in order to solve problems. Individuals who demonstrate double-loop learning challenge the assumptions that guide the development of their strategies or design plans.

Further, Drago-Severson, McCallum and Nicolaidis (2010) indicated that individuals who display triple-loop learning advance to an increased level of awareness and display the availability for adaptations. Eilertsen and London (2005) emphasized the transformative nature of triple-loop learning by stating that:

Triple-loop learning encompasses and transcends both single- and double-loop learning. While single-loop learning asks questions pertaining to actions and double-loop learning asks questions regarding underlying mental models and assumptions, triple-loop learning focuses on transforming organizational members by helping them *learn how to learn*. That is, triple-loop learning focuses on the ability to effectively utilize single- and double-loop learning. As such, triple-loop learning challenges one's existing learning framework as well as one's mental models and assumptions (p. 4).

Engaging in reflective practice, especially double- and triple-loop learning can help teacher candidates to develop increased awareness which can support personal and professional learning and development—in essence they develop capacity.

### **Purpose**

This study was designed to extend the focus of teacher education research from reporting on what teacher candidates *do* to examining what candidates *know* and how they use that knowledge to inform their pedagogical decisions. The purpose of this study was to determine whether the reflections of teacher candidates on their teaching is indicative of a single-, double- or triple-loop learning process. According to Brookfield (1995) the central feature of critical reflective practice is that it helps individuals become more aware of assumptions and helps them to examine and modify those assumptions thereby promoting growth and learning.

Based on the research of Argyris and Schön (1974) it is assumed that candidates who demonstrate double- and triple-loop learning would be more apt to proactively self-correct based on action, evaluation (including self-evaluation), and reflection. By examining the preponderance of double- and triple-loop learning as evidenced in either the electronic portfolio or the edTPA, the researchers hope to discover the effect of the edTPA on reflective capacity.

### **Methodology**

The methodology of this study included two focus groups made up of teacher candidates who discussed their capstone experience during their clinical teaching semester. Focus groups were chosen as the research design because of the potential to reveal detailed information and provide opportunities for deep insight. When well executed, a focus group creates an accepting environment that puts participants at ease allowing them to thoughtfully answer questions in their own words.

A synergistic environment is created through collaborative dialogue.

One focus group included teacher candidates who completed an electronic portfolio. The other focus group included teacher candidates who completed the edTPA. The focus group interviews were analyzed for evidence of single-, double-, and triple-loop learning. The researchers individually examined and categorized each interview response and reached collaborative consensus. Categories were reviewed and revised each time a datum was coded.

### *Participants*

Two focus groups were created from a group of teacher candidates at the completion of their student teaching semester. Focus Group One contained five teacher candidates whose clinical practice culminated in their completion of an electronic portfolio. Focus Group Two contained three teacher candidates who completed the edTPA.

Of the five teacher candidates comprising Focus Group One, four were undergraduate students, one was a graduate student, three were female, and two were male. Of the three teacher candidates comprising Focus Group Two, two were undergraduate students, one was a graduate student; all three were female.

### *Procedures and Analysis*

Adhering to a protocol, the researchers asked both focus groups twelve semi-structured interview questions (see Appendix). Teacher candidates from both groups had the opportunity to respond to questions, followed by informal dialogue. The researchers assigned numerical pseudonyms to respondents for anonymity.

The dialogue from each focus group was coded using indicators from single-, double-, and triple-loop learning. Data was analyzed and reported using a mixed method design. Interview dialogue was calculated using percentages of evidence that demonstrated single-, double-, and triple-loop learning from each of the focus groups. Qualitative analysis included three researchers independently reading responses from all participants and coding responses based on specific language characteristics evident in the narratives. The researchers used the definitions and descriptions of single-, double-, and triple-loop learning to code the narratives of both focus groups. Interview dialogue was independently coded providing validity to the coding protocol (Miles & Huberman, 1994).

### **Findings and Discussion**

Findings from the analysis of the focus groups' transcribed interview responses revealed opposing patterns. Students in both groups demonstrated the ability to reflect on and derive insight from their experience. However, student responses from Focus Group One, those students who completed an electronic portfolio, were more centered on the symptoms of a problem and failed to identify the root cause. Focus Group One respondents identified problems but offered few solutions, indicating evidence of single-loop learning.

For example, Focus Group One respondents focused on classroom management concerns and discipline. These participants offered questions pertaining to classroom management, such as, "I am honestly trying to think about my management, and trying to figure out what I am to do in a situation like this?" This suggests evidence of single-loop status; this participant recognized problematic patterns, yet does not demonstrate the capacity to reach a resolution. Single-loop learners desire better outcomes but fail to find new ways of looking at situations in order to reach their desired outcomes.

Single-loop learners fail to close knowledge gaps between actions and outcomes. It was common that participants in Focus Group One voiced concerns about feeling overwhelmed with the tasks of teaching. One participant commented, "You have so much to consider, your standards, Common Core and you don't want to teach like a script; I am just trying to fit in all the requirements, it will be difficult to do all that and do the collaboration and everything that is needed."

In single-loop learning a situation is observed, a problem is identified, then action is taken to improve the situation. The limitation with single-loop learning is that an individual only removes the observable symptoms; the root cause of the problem is still present and will yield new problems in the future. Single-loop learners recognize problematic patterns but cannot reach resolutions; therefore, they do not engage in true reflective practice (York-Barr, Sommers, Ghore, & Montie, 2006).

Narrative comments from teacher candidates in Focus Group One primarily revealed single-loop learning (see Table 1). These candidates articulated classroom behavioral issues and identified potential classroom difficulties; however, they did so without identifying potential solutions. A participant in Focus Group One replied, "I think that my biggest challenges will be behavior problems." Another participant in Focus Group One spoke about the difficulty of anticipating all students' prior knowledge. It was assumed by this participant that grade level material would be understood and mastered by all students in the classroom; this participant expressed surprise when all students could not master grade level material. A third participant in Focus Group One identified that finding a balance between managing behavior problems and focusing on content delivery was an unanticipated challenge. In addition, this participant was concerned about the quantity of content to be delivered. This participant, "I want to have a good start and a good grasp on what they understand before they get to middle school. There is so much pressure on me to put a lot of focus on academics. That is a big issue too. I don't know, it is really hard to balance dealing with my behavior problems and focusing on teaching the content."

The comments from these three participants identified their perceived understandings of the complexity of a teaching situation. Their comments however, did not reveal how these problems might be resolved. These students provided no evidence on how they expanded their awareness of each situation to interpret these internal teaching challenges. Consequently there was no evidence of their ability to transcend the mentioned challenges nor how they discovered potential possibilities for change.

Even though single-, double-, and to a lesser extent, triple-loop learning was evident in both focus groups, evidence of double-loop and triple-loop learning was higher in the edTPA Group (Focus Group Two). (see Table 1). For example: one candidate in Focus Group Two demonstrated double-loop learning by stating, "When planning, you start out with a plan that you thought was great, and then the students completely change it because they would come up with all these new ideas after having a great conversation about the story. I was so excited that a new lesson had come out of their ideas!" This teacher candidate was less concerned that a planned lesson was not completed, and more eager to discover what new learning might occur as a result of student initiated ideas. This is strong evidence of the shift from single-loop to double-loop learning where the emphasis shifted from being teacher focused to being student focused. Another candidate in Focus Group Two commented, "I think it is important to give them time to ask questions because often we are just teaching, teaching, teaching, and we say 'Are there any questions?' but there is not time for collaborative discussion. Kids need to feel comfortable enough to have time enough to think. I'm definitely going to work on an environment where students are not afraid to raise their hands and tell me, 'Okay, I'm not understanding.'" This teacher candidate anticipated the importance of fostering a positive classroom environment where students feel respected and feel safe to ask questions.

A third candidate from Focus Group Two reflected on her decisions to differentiate instruction in her Math classroom. She stated, "After teaching I would write down student names and the areas in which they needed help. The next day during my regular lesson, I created small groups based on students' readiness of the skill rather than their ability level". This candidate demonstrated an understanding of the formative assessment process (Black & Wiliam, 1998) and determined individual student needs by differentiating instruction according to readiness rather than ability by creating flexible grouping arrangements. In all three scenarios mentioned above, each candidate analyzed the situation to discern the root cause of the dilemma. In addition these candidates went on to identify potential solutions. There was stronger evidence of their ability to transcend the mentioned challenges and how they discovered potential possibilities for change. Double-loop learners do not simply recognize problems and then change behaviors. They also examine root causes of problems, by asking "Why?" The practice of double-loop learning both proactively prevents future occurrences of a problem, and also the successful recognition and confrontation of a problem before its fruition.

Triple-loop learning requires an advanced level of awareness. Triple-loop learning is the experience of learning to learn (Drago-Severson, McCallum, & Nicolaidis, 2010). A teacher candidate in Focus Group Two demonstrated triple-loop learning by describing knowledge of students' personalities and individual needs in order to more effectively plan classroom instruction. Evidence of triple-loop learning is demonstrated in this statement, "I feel successful when my students are achieving solid goals and when they start asking their own questions that leads to the next concepts. When they start thinking, well, 'What about this?' and they come up with ideas that are new and will lead to the next concept. My students are pushing their own learning." This reflection provides clear evidence of an advanced level of awareness that celebrates student capacity to learn.

The potential for transformational change exists when candidates engage in triple-loop learning.

The candidate further explained the importance of horizontal and vertical collegiality in order to effect continual student success. This example of triple-loop learning highlights the candidate's ability to move beyond assumptions to more critically examine the context of the learning environment and the role of the teacher. Another example of triple-loop learning was seen when a candidate discussed insights gained about the collaborative role of all school professionals attributing to student success. This candidate commented, "We're one school and we are all teaching the same students, sometimes for multiple years....students deserve that everyone in the school is collaborating, not just within their grade level, but within the entire school." This example demonstrates that this student became invested in her student teaching experience and that her understanding of the context of school shifted from seeing herself as the sole contributor to her students' success to recognizing the importance of school-wide collaboration as having a greater influence on student success.

The percentage of responses from Focus Group One and Focus Group Two are shown below in Table 1 and are categorized as single-, double-, and triple-loop learning.

**Table 1. Single-, Double-, Triple-Loop Learning Patterns**

Focus Group	Single- Loop Learning	Double-Loop Learning	Triple-Loop Learning
Portfolio Group (Focus Group One)	71%	26%	3%
TPA Group (Focus Group Two)	48%	43%	9%

Participants in Focus Group One had a greater emphasis on single-loop learning as compared to participants in Focus Group Two. While responses from Focus Group One demonstrated some reflection, 71% of the cases did not go beyond a very basic way of thinking about teaching. These candidates failed to take into consideration the context of their teaching environment. The focus of their narratives centered on day-to-day operations with little emphasis on resolution of the identified challenges. The results of their reflections failed to create a shift in understanding the context of their environment and did not fundamentally change their capacity to identify the complexity of the situation. Candidates who remained at the single-loop learning level appeared unable to resolve the underlying causes of the identified problems.

Conversely, the teacher candidates in Focus Group Two had three times as many incidents of triple-loop learning and twice as many incidents of double-loop learning as compared to participants in Focus Group One. While responses from Focus Group Two demonstrated reflection and insight, 52% of the responses displayed a level of specificity and a cognitive emphasis not present in Focus Group One. These responses transcended single-loop learning in that problems were identified and viable solutions were sought. The relationship between the dilemma and behavior was fundamentally changed as demonstrated by candidates' ability to examine and modify their assumptions, thereby leading to growth and greater capacity for reflection.

### Conclusion

The focus group interviews provided insight into teacher candidates' capacity to reflect. Interview data from Focus Group Two suggests the edTPA fostered stronger capacity for reflective practice as evidenced in a preponderance of double- and triple-loop learning patterns.

This study indicates that the use of the edTPA increases candidates' opportunities to be introspective thus cultivating a professional awareness through reflective practice. The Teacher Performance Assessment tool allows teacher candidates opportunities to engage in reflection, to critically analyze instructional decisions, and to reflectively transcend single-loop learning by fostering a deeper understanding of the context of teaching.

While the teaching profession is poised to enter an era of increased accountability, the need to develop teachers who demonstrate higher levels of professional competence is more important than ever before. The edTPA is a valuable tool that can be used to accomplish this goal.

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### Appendix

#### Focus Group Questions

1. What did you take into consideration when planning for teaching?
2. How did you know when you have met your teaching goals?
3. What was your greatest teaching challenge?
4. What were some important things to consider about your students?
5. What were some important things to consider when deciding how you are going to teach?
6. How did you assess student learning?
7. How did you analyze student work?
8. How did you guide students to deeper understanding?
9. How did you meet specific learning needs of your students?
10. Define Academic Language. How did you develop students' academic language and content learning?
11. What do you still want to learn?
12. Is there anything else you would like to tell us about your role as a teacher?