# Scholarly Teaching Through Action Research: A Narrative of One Professor's Process

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*This article shares a first-hand account of an action research project conducted in a college-level early adolescent development course to better understand written and verbal reflection as learning tools, improve the author's teaching effectiveness, and foster reflective habits in pre-service teachers. The article includes a brief overview of related literature and a description of several reflective activities and assignments used in the course before presenting and discussing the project's results based on Ferrance's (2000) 6-step action research process.*

ETE 227: Development of the Early Adolescent is an elective course offered at Bradley University, a private, comprehensive university located in the Midwest region of the United States. Because ETE 227 is required for the Illinois Middle School Endorsement, most Bradley teacher education majors take the course, often during their junior or senior year. Each fall and spring semester, ETE 227 is offered one evening a week from 4:30 to 7:00 p.m. A maximum of 30 students can enroll, and the class usually fills to capacity. During fall 2007, I was brand new to college teaching. As I struggled through teaching ETE 227 that first semester, I spent a great deal of time preparing and delivering PowerPoint lectures because I believed it was expected of me. However, I quickly discovered that 2.5 hours is a long time to actively engage students with teacher talk. I also learned that many college students do not complete their reading assignments prior to coming to class. So, in preparation for my second semester, I began adjusting my teaching approach.

The ETE 227 learning journal constituted a major overhaul between the fall and spring semesters of my first teaching year at Bradley. Instead of weekly chapter quizzes, which I had tried in an attempt to motivate students to read the textbook, I asked students to write two 300-word reflections each week, one after reading the textbook chapter and the other following class. Three times that semester, pre-service teachers submitted their learning journals electronically via e-mail attachment. I read each one (seven or eight entries per submission) and responded via e-mail. In my responses, I offered feedback about each student's current level of reflection and commented on at least one aspect of the course content. Reading students' learning journals enabled me to see which aspects of the course content intrigued them and which aspects they did not appreciate or fully understand. Because most students shared openly, I also got to know them. But most important, they were reading and responding to the textbook more thoughtfully than students had during the previous semester. I was encouraged by the successful outcome I had achieved. Since implementing the ETE 227 learning journal in spring 2008, I have used it every semester.

Although I did not realize it at the time, my decision to replace the weekly chapter quizzes with a learning journal initiated a scholarly teaching process that has continued for years. The purpose of this article is to share a first-hand account of that process, which began informally with a trial-and-error approach and was later formalized through the design and implementation of an action research project. Following a brief overview of related literature and a description of several reflective activities and assignments used in the course, I will present and discuss the project's results based on Ferrance's (2000) 6-step action research process.

## Overview of Related Literature

Kolb's (1984) Experiential Learning Theory asserts that learning occurs during or following a concrete experience, when an individual engages in reflective

observation about the experience. This leads to abstract conceptualization or *making sense* of the experience; and finally, active experimentation that modifies or improves what was initially learned. In the college classroom, experience-based learning activities can "promote growth-producing experience for learners" (Kolb & Kolb, 2005, p. 205) by respecting their current levels of knowledge and offering a hospitable or safe learning environment. Importantly, experiential learning must include opportunities for learners to converse, act, and reflect on their learning, develop expertise, and engage emotionally (Kolb & Kolb, 2005). In this way, experiential learning transcends simple acquisition of information and skills because it is individualized and personal. Mezirow (2000) calls such learning processes transformational because each learner's experiences and subsequent reflection can result in thinking and behaving in new and different ways.

Experiential learning is not limited to the P-20 classroom (i.e., primary, secondary, and post-secondary educational settings). Accumulated life experiences, paired with opportunities for reflection and dialogue, foster learning throughout adulthood (Rohlwing & Spelman, 2014). This may be particularly true for professionals. Research shows that effective teachers reflect on their teaching practice systematically, analytically, and critically (Danielson, 2007; Ostorga, 2006; Walkington, Christensen, & Kock, 2001). Schon (1983) identifies two types of reflection. "Reflection-in-action" (p. 68) involves thinking on one's feet as an experience is happening. Reflection-on-action involves thinking, talking, or writing about an experience after it occurs. Action research, the process of systematically and intentionally studying one's own teaching (Jacobs & Yendol-Hoppey, 2014), is an in-depth means of reflection-on-action that often requires critical reflection.

Danielson (2007) writes, "It is through critical reflection that teachers are able to assess the effectiveness of their work and take steps to improve it" (p. 92). Critical reflection takes reflection-in-action and reflection-on-action to the next level by considering moral and ethical dilemmas (Mezirow, 1991) and/or examining underlying beliefs, values, and assumptions (Brookfield, 2000). For teachers, critical reflection focuses especially on the why of teaching (Walkington et al., 2001). It is a means through which teachers can articulate their personal teaching philosophy and better understand how their beliefs influence their decisions (Ostorga, 2006). For example, in reflecting-on-action about why so much class time is devoted to small group discussion during a particular lesson, a teacher may articulate an underlying assumption that students need to talk things through in order to fully understand them. Although many theorists view critical reflection as a higher-order form of reflection, Zeichner (1994) argues that all forms of reflection are valid because reflection is a developmental process.

Reflection is useful for teachers at all levels of experience, but it is particularly valuable for new teachers (Melville, Fazio, Bartley, & Jones, 2008; Rike & Sharp, 2008). However, because reflection is developmental, new teachers may not know how to engage in reflection effectively (Ostorga, 2006; Yost, Senter, Forlenza-Bailey, 2000). Zeichner (1994) asserts, "If prospective teachers are to become reflective about their practice in whatever sense one defines it, then they need to engage in activities during their pre-service preparation that fosters this reflectiveness" (p. 21). One approach to teaching reflection is allowing time for learners to make sense of new information by connecting it to their prior knowledge, making generalizations, and applying it in new or different situations (Jones & Jones, 2013; Lupinski, Jenkins, Beard, & Jones, 2012). Yost and colleagues (2000) explain:

> Opportunities to construct a personal knowledge of learning theories and discuss issues relating to diversity and social, political, and economic forces that impinge upon schools will provide preservice teachers with a firm knowledge base from which they can critically reflect on the practice of teaching. (p. 47)

Such a constructivist approach requires the professor to assume the role of facilitator, rather than expert; it also demands that learners be given ample time to explore, think, discuss, plan, revise, and share (Carter, 2008-2009; Vygotsky, 1978).

**ETE 227 Reflective Activities and Assignments**

The process of learning how to reflect can be supported with structures such as writing prompts, guided questions, self-assessment tools, and other means such as teaching portfolios and samples of student work (Educational Testing Service, 2014; Hole & Hall McEntee, 1999). But even with support, pre-service teachers' ability to reflect can vary widely (Jansen & Spitzer, 2009). Therefore, in addition to the ETE 227 learning journal, I began to develop a variety of reflection-based assignments and activities to keep students engaged during class time and foster reflective habits. In addition to learning the course content, critical reflection was a desired outcome. In most cases, students had the opportunity to reflect during the activity or assignment itself as well as following, through the ETE 227 learning journal. In this way, I was able to informally assess the effectiveness of each activity or assignment and make appropriate revisions. Following are brief descriptions of each reflection-based activity or assignment in its present form.

**Autobiographical display.** Designed by a professor who taught ETE 227 before I joined Bradley's Department of Teacher Education faculty, the autobiographical display assignment consists of a paper, a poster, and a class presentation focused on each student's life experiences between the ages of 11 and 15. The paper includes reflections on key aspects such as family, friends, school experiences, and career aspirations during young adolescence; and the poster includes a photograph, self-description, quotations from family and friends, and information about favorite things during this developmental period. The posters are presented during class time. Pre-service teachers generally like this assignment. In addition to providing a foundation for the course and helping the class get to know one another, I am able to refer back to the examples and experiences that students shared as we move through ETE 227 chapter by chapter.

**Guest speakers.** Guest speakers visit my ETE 227 classroom three times each semester, providing additional information about relevant topics such as homelessness, urban youth culture, and teen dating violence that are only briefly mentioned in the course textbook. Pre-service teachers appreciate the guest speakers because they provide first-hand information on unfamiliar topics. The guest speakers also allow me to stay current on these topics and maintain professional connections in the community.

**Roundtable discussions.** The roundtable discussion assignment requires pairs of students to read and discuss an assigned article about young adolescent development or effective middle schooling before individually leading two, 12-minute roundtable discussions during class time. Students spend the first half of their time explaining their research article and the second half engaging their small group in discussion. Following the experience, students receive peer feedback and complete a written reflection. Many pre-service teachers recognize that the assignment builds professional skills that they will need in their future classrooms, faculty meetings, and professional conferences.

**Media stations.** A class activity used in conjunction with a textbook chapter about early adolescents' use of technology and social media requires small groups of students to spend 15 minutes at four different media stations: television, music, technology, and print media. At each station, students view media through a specific lens, such as a parental or historical perspective, and complete a specific task, such as reaching consensus on five television programs most appropriate for

one's 13-year-old daughter. Students enjoy spending class time engaging with media, and the subsequent analysis and class discussion allows me to integrate various theories of media consumption and other key concepts—a disguised lecture—in ways that relate directly to students' experiences.

**Sex education debate.** The sex education debate, another class activity used in conjunction with the textbook, explores four different approaches to sex education. After being randomly assigned to one of the four approaches, small groups are given 15 minutes to prepare. The debate consists of three rounds. The first round offers arguments in favor of each sex education approach, the second round presents arguments against the opposing approaches, and the third round allows for counterarguments and closing remarks. Following the sex education debate, I engage the class in discussion. Although most pre-service teachers report that their beliefs about sex education do not change as a result of this activity, many reflect in writing later about the value of closely and objectively examining the strengths and weaknesses of approaches they favor as well as those they dislike.

**Bem Sex Role Inventory.** The Bem Sex Role Inventory (BSRI), a self-assessment of masculinity, femininity, and androgyny, was published by Sandra Bem in 1974. After reading a textbook chapter on gender socialization, I ask students to complete the inventory as a means of stimulating class discussion. Pre-service teachers are always very eager to complete the inventory, and many share their results openly as we discuss major concepts about gender socialization. However, many question the validity of the inventory when they learn that it was published forty years ago.

**Routine assignments and activities.** Other ETE 227 assignments and activities, including chapter PowerPoint presentations, small group chapter discussions, and videos on classroom management, constitute more routine classroom practices. I have found that the key to keeping college students engaged for 2.5 hours is brisk pacing and variety (Hunzicker & Lukowiak, 2012). Although I use some traditional teaching methods, such as lecture, during almost every class meeting, I keep things moving, change up the sequence of activities often, and throw in a brand new activity—such as the sex education debate or media stations—when students least expect it.

## Scholarly Teaching through Action Research

Action research "focuses on the concerns of teachers, rather than outside researchers, and provides a vehicle that teachers can use to untangle the complexities of their daily work" (Jacobs & Yendol-Hoppey, 2014, p. 304). An in-depth means of engaging in reflective practice, action research is based on three assumptions: (a) educators work best on problems they identify for themselves, (b) educators become more effective when they examine, assess, and modify their own teaching practice, and (c) educators help one another through collaboration and sharing (Borg, 1992; Watts, 1985). Teachers conduct action research to develop personally and professionally, improve and enhance student learning, and advance the teaching profession (Johnson, 1995). Developed for use in P-12 classrooms, action research is gaining acceptance as an approach to reflective practice in higher education, especially in the field of teacher education (Bossio, Loch, Schier, & Mazzolini, 2014; Chigeza & Halbert, 2014).

Action research projects can be visionary and long-term, such as implementing a behavioral intervention and then tracking student office referrals for several weeks; or straightforward and simple, such as documenting one's movement around the classroom for an entire day. The idea is to gather meaningful data that can be reflected upon and used to inform teaching practice.

The action research process typically involves six steps: 1) identifying the problem and articulating research questions, 2) gathering data, 3) interpreting the data, 4) acting on the evidence, 5) evaluating the outcome(s) of changes made, and 6) identifying new questions (Ferrance, 2000). Organized according to these six steps, my ETE 227 action research project is reported in the sections that follow.

### Action Research Process

**Step one: Research problem and questions.** The problem addressed through this action research project was the need to better understand written and verbal reflection as learning tools, improve my teaching effectiveness, and foster reflective habits in pre-service teachers. Written reflection was defined as a solitary, reflection-on-action process in which pre-service teachers explored concepts or events in writing. Verbal reflection was defined as a collaborative or interactive, reflection-in-action process during which pre-service teachers explored concepts or events through discussion. The project was guided by four research questions: (a) Which assignments and activities are most likely to engage pre-service teachers in thinking about the course content?; (b) How do pre-service teachers use written and verbal reflection as learning tools?; (c) How do pre-service teachers perceive the value of written and verbal reflection?; and (d) How likely are pre-service teachers to use written and verbal reflection in the future?

**Steps two and three: Data collection and analysis.** After receiving approval from my university to conduct the project, data were collected over six semesters' time. In all, 172 undergraduate teacher education majors who completed ETE 227 between spring 2009 and fall 2011 were invited to participate. Of those invited, 82% were female and 18% were male students. In addition, 89% were White, non-Hispanic, 93% were traditional college age (i.e., aged 24 or younger), and 98% were college-level juniors or seniors. Of the 172 pre-service teachers, 84 chose to participate in the project, rendering a 49% response rate. Data were collected via an online survey administered using Survey Monkey (www.surveymonkey.com) immediately following the posting of final grades each semester. Descriptive statistics were calculated based on participating pre-service teachers' survey responses, and bar graphs were created using Microsoft Excel. Following are the project's results, paired with my interpretations in light of related research on student engagement and written and verbal reflection.

## Results and Discussion

### Most Engaging Assignments and Activities

In completing the online survey, participating pre-service teachers were first asked to identify the class activities and assignments that were most effective in getting them to think about the ETE 227 course content (see Figure 1). Media stations were deemed the most engaging class activity, with 82% of respondents rating them as highly effective. Guest speakers came in second, at 76%. Tied for third place at 69% were roundtable discussions and the autobiographical display, with the sex education debate coming in a close fourth at 68%. Bringing up the rear were small group chapter discussions (64%), learning journals (56%), and chapter PowerPoint presentations (45%). Not shown in Figure 1, class activities and assignments deemed least engaging were the Bem Sex Role Inventory (BSRI) (33%) and course exams (27%).

**Figure 1 How Effective Was Each of the Following in Getting You to Think About the ETE 227 Course Content?**

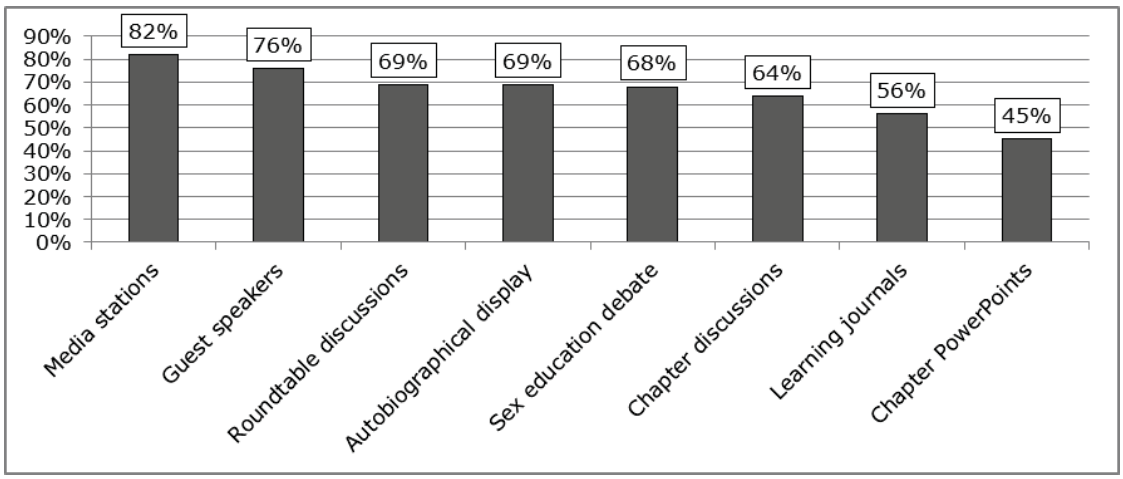


*Figure 1*. Participants' (*N* = 84) perceived effectiveness of ETE 227 class activities and assignments.

Millennials, born "roughly between 1980 and 2000" (para. 1), are multi-taskers, well-connected through social media, and technology-savvy (Abbot, 2013). Therefore, it comes as no surprise that media stations were considered by the ETE 227 pre-service teachers to be the most engaging class activity. Although media stations constituted one, stand-alone activity, it was novel, challenging, and highly interactive, which created an enjoyable and memorable learning experience (Dowson & McInerney, 2001). Although not high-tech, guest speakers, which rated second, brought in members of the community to discuss authentic educational issues and engaged students emotionally, factors also identified in similar studies as highly engaging (Hunzicker & Lukowiak, 2012; Kolb & Kolb, 2005).

The roundtable discussions, autobiographical display, sex education debate, and small group chapter discussions, which all ranked near the middle, required pre-service teachers to explore their personal experiences, values, and prior knowledge in new and different ways. Although more routine than the media stations and guest speakers, these somewhat-engaging activities and assignments offer a comfortable balance of challenge and support by scaffolding complex tasks so that each student can work within his or her zone of proximal development (Vygotsky, 1978). In addition to a great deal of self-focus, research shows that such assignments and activities can create cognitive dissonance, which stimulates learning by motivating students to resolve discrepancies between their current thinking and new information (Rohlwing & Spelman, 2014). The ETE 227 learning journal, a commonly used tool for developing reflective practice (Dunlap, 2010; Lupinski, et al., 2012), also required self-exploration around the course content although most pre-service teachers preferred verbal reflection to the solitary nature of the learning journal. Finally, the Bem Sex Role Inventory (BSRI) and course exams were ranked least engaging by the ETE 227 pre-service teachers since many considered the BSRI invalid due to its age and very few college students enjoy taking exams.

## Written and Verbal Reflection as Learning Tools

**Reflection and thinking.** The second survey question directed pre-service teachers to consider written and verbal reflection in relation to their thinking (see Figure 2). Sixty-five percent of respondents reported that written reflection prompted them to think about themselves as people, while only 48% said the same of verbal reflection. In addition, 56% reported that written reflection prompted them to think about themselves as learners, compared to 52% for verbal reflection.

Moreover, 79% of respondents reported that written reflection prompted them to think about themselves as future teachers, while only 67% reported that verbal reflection did so.

**Figure 2 Reflection Prompted Me to Think About**

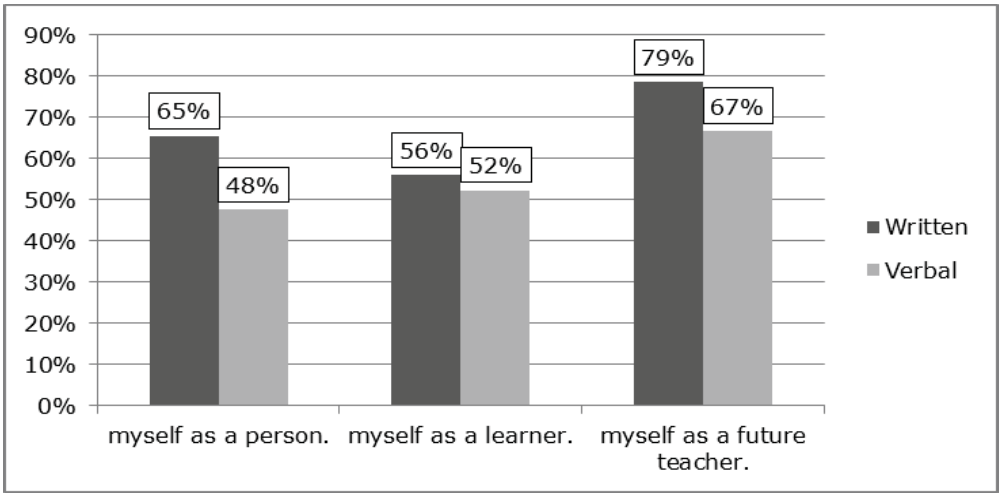


*Figure 2*. Participants' responses to forms of self-reflection: "Reflection prompted me to think about…"

In all three instances, written reflection was more effective than verbal reflection in prompting pre-service teachers to think about themselves. Other studies reinforce this finding. Dunlap (2010), for example, found that college students' perceptions of their work, learning, and achievements changed over time as a result of reflective journaling activities. However, it should be noted that verbal reflection was reported by two-thirds of respondents as a strong prompt in getting them to think about themselves as teachers. This may be due to the fact that discussion-based activities provide an opportunity for pre-service teachers to bounce ideas off one another as they discuss scenarios germane to their future classrooms (Kolb & Kolb, 2005; Rohlwing & Spelman, 2014). Research reiterates that engaging students collaboratively is more supportive of problem solving and higher order thinking than more traditional learning activities (Gavalcova, 2008), and Millennials as a group tend to prefer interactive, collaborative activities to solitary ones (Abbot, 2013; Carter, 2008-2009).

**Reflection and learning.** The third survey question directed pre-service teachers to consider written and verbal reflection in relation to their learning (see Figure 3). Forty-three percent of respondents reported that written reflection helped them to expand their understanding of the ETE 227 course content, while 56% reported that it helped them to deepen their understanding. Conversely, 63% of respondents reported

**Figure 3 Reflection Helped Me to**

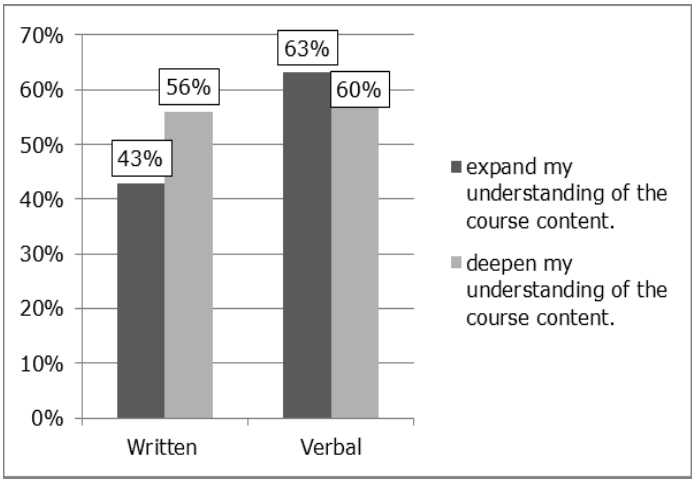


*Figure 3*. Comparing written and verbal reflection with comprehending course content: "Reflection helped me to…"

that verbal reflection expanded their understanding of the course content while 60% reported that it deepened their understanding of the course content.

These findings suggest that, when considered in isolation, written reflection is more likely to deepen understanding and verbal reflection is more likely to expand understanding. However, in comparing the two types of reflection, the majority of pre-service teachers reported that verbal reflection both deepened and expanded their understanding more so than written reflection. Kolb and Kolb (2005) explain, "Making space for good conversation as part of the educational process provides the opportunity for reflection on and meaning making about experiences that improve the effectiveness of experiential learning" (p. 208). This finding suggests that a balance of written and verbal reflection is optimal, an opinion that is reinforced by research (Lin & Lucey, 2010; Lupinski, et al., 2012) and reiterated by pre-service teachers through survey item 6, discussed later.

**Before and after reflection.** The fourth survey question directed pre-service teachers to consider their thinking before and after reflecting during ETE 227 (see Figure 4). Thirty-one percent of respondents reported that they thought about the course content before reflecting in writing, and 17% reported that they thought about it before reflecting verbally. In addition, 20% of respondents stated that they thought about things they wrote in the days that followed, while 36% said that they thought about things they discussed in class during the days that followed. Moreover, 18% of respondents reported sharing insights from their written reflections with others outside of class, while 36% of respondents reported sharing insights from class discussions with others outside of class.

**Figure 4 Before and After Reflection**

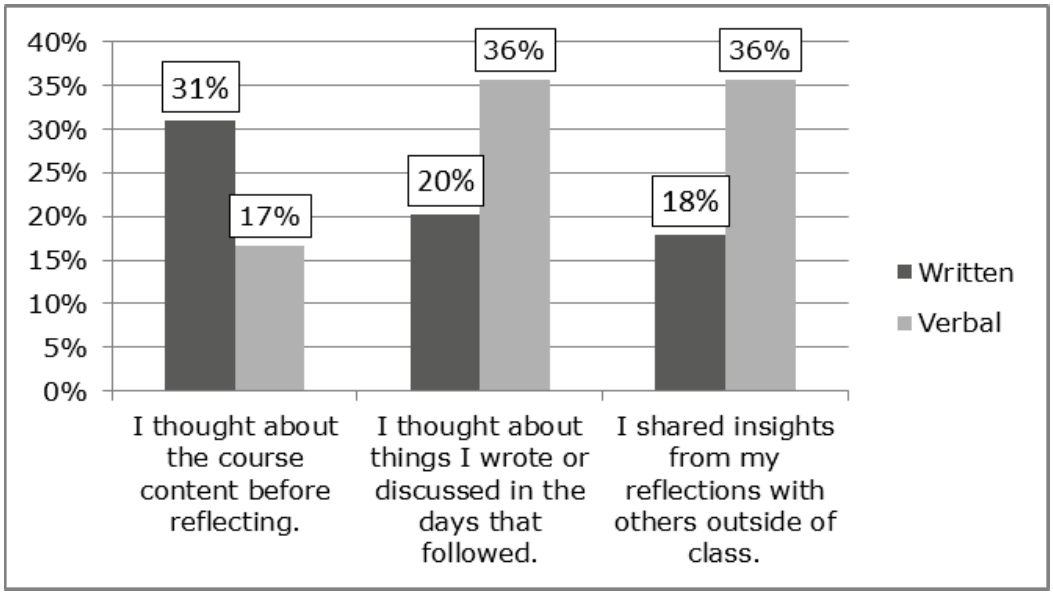


*Figure 4*. Participants' experiences before and after reflection.

These findings suggest that pre-service teachers are more likely to think before they write than they are to think before they discuss. However, the pre-service teachers in this project reported that once they reflect in writing, they are more likely to forget about it. Reflecting verbally during class discussions, on the other hand, is about twice as likely to stay on pre-service teachers' minds and be shared with others during subsequent conversations. One reason for this may be Millennials' strong connections to their peers through social media (Abbot, 2013).

## Perceived Value and Future Use of Reflection

**Perceived value of reflection.** The fifth survey question was designed to measure pre-service teachers' perceived value of written and verbal reflection (see Figure 5). Twenty percent of respondents reported that they enjoyed reflecting in writing during ETE 227, compared to 58% who reported that they enjoyed reflecting verbally during the course. Additionally, 27% agreed that without reflecting in writing they would not have learned as much, while 57% agreed that if they had not reflected verbally during class time they would not have learned as much. Moreover, 49% of respondents reported that as a result of engaging in written reflection during ETE 227, they better understand its value as a learning tool; 56% reported that as a result of engaging in verbal reflection during ETE 227 they better understand its value as a learning tool.

**Figure 5 Perceived Value of Written and Verbal Reflection**

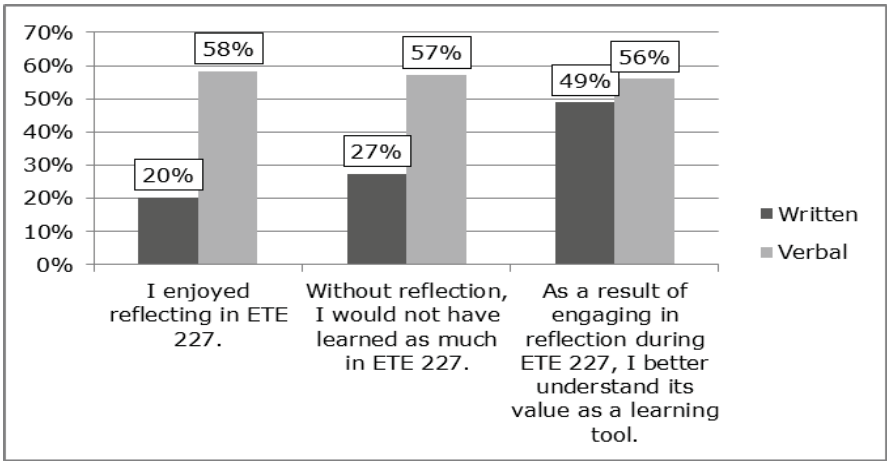


*Figure 5*. Perceived value of written and verbal reflection.

These findings show that the pre-service teachers who participated in this project enjoyed reflecting verbally almost three times more than they enjoyed reflecting in writing. Similarly, they credited verbal reflection as a learning support more than twice as often as they credited written reflection, reinforcing that learning is a social activity (Dowson & McInerney, 2001; Kolb & Kolb, 2005; Vygosky, 1978) and that Millennials generally prefer interactive, collaborative activities (Abbot, 2013; Carter 2008-2009).

**Figure 6 What is the Optimum Balance of Written and Verbal Reflection for Pre-Service Teachers?**

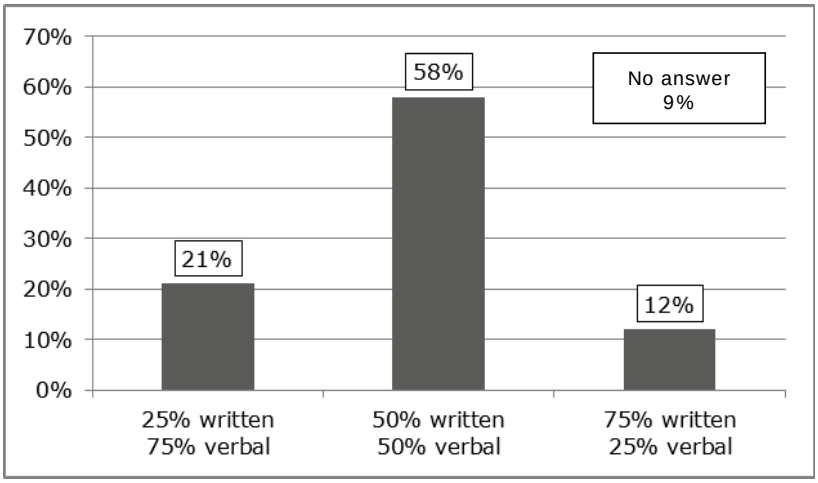


*Figure 6.* Optimum balance of written and verbal reflection.

**Optimum balance.** The sixth survey question asked pre-service teachers to identify the optimum balance of written and verbal reflection for pre-service teachers (see Figure 6). Twelve percent of respondents felt that a balance of 75% written reflection and 25% verbal reflection was optimal; 21% felt that a balance of 25% written reflection and 75% verbal reflection was optimal; and 58%

felt that a balance of 50% written reflection and 50% verbal reflection was optimal. Nine percent of respondents did not provide an answer.

Although more pre-service teachers perceived verbal reflection a more useful learning tool than written reflection, the majority identified a 50/50 balance of written and verbal reflection as optimum, suggesting that they understood the value of both types of reflection. Research supports a balanced approach to building pre-service teachers' reflective practice skills. One team of professors found that a balance of individual-based and group-based reflective activities helped pre-service teachers better understand themselves and their students around issues of cultural awareness (Lin & Lucey, 2010). In another study, a College of Education seeking to integrate more reflective practice activities into its teacher education programs identified interviews, reflective journaling, lesson plans, instructional tools, videotaped lessons, professional portfolios, skill mastery projects, simulations/role playing, and action research as means through which pre-service teachers can practice verbal and written reflection (Lupinski et al., 2012).

**Future use of reflection.** The seventh and final survey question directed pre-service teachers to predict how they will use written and verbal reflection as learning tools once they enter the teaching profession (see Figure 7). Fifty-six percent of respondents predicted that they would use written reflection to engage students in their future classrooms, and the same percentage predicted that they would use written reflection as a means of self-directed professional development. Conversely, 82% of respondents predicted that they would use verbal reflection to engage students in their future classrooms, and 75% anticipated that they would use verbal reflection as a means of self-directed professional development.

**Figure 7 As a Teacher, I Will Use Reflection as a Learning Tool**

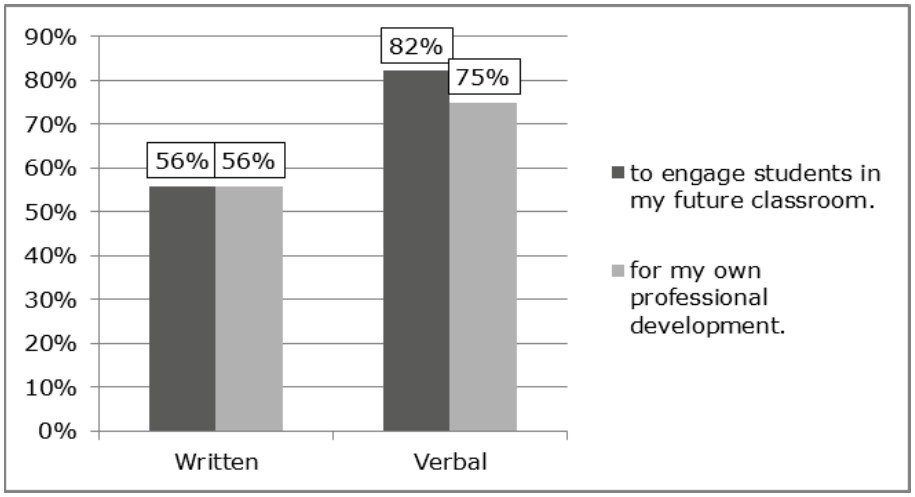


*Figure 7*. Future use of written and verbal reflection: "As a teacher, I will use reflection as a learning tool…"

Pre-service teachers' predictions about their future use of reflection are consistent with their general preference toward interactive, collaborative activities. A higher percentage of respondents predicted that they will use verbal reflection in their future classrooms, but most believed they will also use written reflection. Unfortunately, few studies on building pre-service teachers' reflective practice skills have followed through to the first years of teaching. This reveals a gap in the literature, which signals an opportunity for further research.

## Follow Through

### Steps Four and Five: Acting on the Evidence and Evaluating the Outcomes

When using action research, or any method of scholarly teaching, it is not enough to simply answer the research questions. An important last step is applying the information in ways that benefit students (Borg, 1992; Brookfield, 2000; Jacobs & Yendol-Hoppey, 2014). Because the data for this project were collected over six semesters' time, I was able to engage in continuous and ongoing data analysis by observing pre-service teachers' responses to each ETE 227 activity and assignment as it occurred in addition to reviewing participants' collective survey responses each semester, and overall once data collection was complete. Through these observations, I frequently made adjustments to the course's reflection-based activities and assignments, including clearer parameters, directions, and assessment criteria; more direct instruction as a precursor to class activities; and allowing more (or less) class time for some activities. I also learned to prepare better questions and prompts to guide learners progressively toward higher levels of thinking during class discussions (Kellough & Kellough, 2008) and ensure that written reflections showed evidence of critical reflection. Additionally, I improved the quality and frequency of the feedback I provided in response to students' learning journal submissions. Using a dialogue journal approach, defined by Tompkins (2008) as a back-and-forth written conversation between teacher and student, I learned to provide tangible, actionable, and timely feedback (Wiggins, 2012) for each student three times each semester.

**When using action research, or any method of scholarly teaching, it is not enough to simply answer the research questions.**

**Limitations.** Even though the project supported data-driven improvements to the course over several semesters' time, it is important to acknowledge its limitations. For example, terms such as "written reflection" and "verbal reflection" may have been misinterpreted by the survey respondents since I did not clearly define these terms in the survey. Student perceptions self-reported following the semester may not have accurately represented their experiences during the course (Fowler, 2013), and researcher bias may have caused me to hear what I wanted to hear when interpreting students' learning journals and survey responses (Grbich, 2006). However, in the final analysis I believe that the positive outcomes of the project outweigh the limitations.

### Step Six: Identifying New Questions

Through this project, I learned that media stations, guest speakers, roundtable discussions, and the autobiographical display are the most engaging ETE 227 assignments and activities. I learned that both written and verbal reflection prompted participating pre-service teachers to think about themselves from various perspectives, and that verbal reflection deepened and expanded their understanding more so than written reflection. I learned that the pre-service teachers who participated in this project were more likely to think before they wrote than they were to think before they discussed, but verbal reflections were more likely to stay on their minds and be shared with others later. And finally, I learned that those who participated in this project considered a 50/50 balance of written and verbal reflection optimum, and that most planned to use both types of reflection in their future classrooms.

**… verbal reflections were more likely to stay on their minds and be shared with others later.**

Now that ETE 227 is running smoothly, I wonder where my former students are teaching, and whether they are using verbal and written reflection as learning tools in their own classrooms. I also wonder if the reflection activities in

which they engaged during ETE 227 caused them to learn more about young adolescent development than a traditional teaching approach would have rendered. Specifically, I would like to know more about the reasoning and sentiment behind my students' survey responses. Possible directions for continued action research include a content analysis of pre-service teachers' learning journals and interviews with individual students.

## Conclusion

This article shares a first-hand account of an action research project designed to better understand written and verbal reflection as learning tools, improve teaching effectiveness, and foster reflective habits in pre-service teachers. It is my hope that this narrative offers inspiration and instruction for others wishing to engage in scholarly teaching through action research.

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