

Using the Tuning Protocol to Generate Peer Feedback During Student Teaching Lesson Plan Development

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Abstract

Self-adequacy during the student teaching experience is high on the list of concerns expressed by student teachers (Fritz & Miller, 2003; Ng, Nicholas, & Williams, 2010). That factor, in combination with others, determines student teachers' goals and sparks their motivation to engage in effective instructional planning (Baylor & Kitsantas, 2005). The purpose of this study was to determine student teachers' perceptions of the use of the tuning protocol, a formalized process of reflective practice and peer review (Allen & McDonald, 1993; Easton, 2009), to revise lesson plans. When open coding was used to analyze student teachers' perceptions, four themes emerged: benefits, drawbacks, structure of the tuning protocol, and recommendations for future use. The majority of student teachers were satisfied with the outcomes of the tuning protocol review process and planned to use it in their professional careers. Recommendations for use of the tuning protocol in various stages of the teacher education program are presented.

Keywords: preservice teachers; reflection; peer evaluation; lesson plan development; tuning protocol

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Introduction

Limited research has been conducted on the instructional planning process during student teaching in agricultural education (Greiman & Bedtke, 2008). An essential role of teacher preparation programs is to persuade preservice teachers of the importance of instructional planning and to help them become effective instructional planners (Baylor & Kitsantas, 2005). Becoming an effective instructional planner depends heavily on the degree to which a preservice teacher feels capable of designing an instructional plan and his or her cognitive and metacognitive abilities (Baylor & Kitsantas, 2005; Driscoll, 2000; Reiser & Dick, 1996; Spiro, Vispoel, Schmitz, Samarapungavan, & Boerger, 1987).

“Teacher [preparation programs] attempt to sort out which factors contribute to developing pre-service teachers and which factors may undermine their development” (Knobloch, 2006, p. 36), particularly relative to the preservice teachers' self-efficacy and confidence in their teaching ability. Teacher self-efficacy has been defined as a judgment of one's “capabilities to bring about desired outcomes of student engagement and learning” (Tschannen-Moran & Woolfolk Hoy, 2001, p. 783). Teacher efficacy beliefs have been associated with teachers' concerns about teaching (Boz & Boz, 2010; Charalambous & Philippou, 2010; Dunn, Airola, Lo, & Garrison, 2013). Cakmak (2008) found student teachers' greatest concerns were in the areas of “classroom management, maintaining students' attention, teaching methods, undesired conduct in the classroom, motivating students, and teaching at the students' level” (p. 161). Fuller and Bown (1975) described a pattern of preservice

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teacher concerns that transitioned from self, to task, and ultimately to impact. Self-adequacy during the student teaching experience is high on the list of concerns expressed by student teachers (Fritz & Miller, 2003; Fuller & Bown, 1975; Ng, Nicholas, & Williams, 2010; Paulsen, Anderson & Tweeten, 2015; Stair, Warner, & Moore, 2012). That factor, in combination with others, determines student teachers' goals and sparks their motivation to engage in effective instructional planning (Baylor & Kitsantas, 2005).

Lesson plan design and development has often been a concern of beginning teachers (Fritz & Miller, 2003; Greiman & Bedtke, 2008; Veenman, 1984). Specifically, Lee and Lee (2014) found that student teachers' attitudes towards lesson planning skills had a positive, significant correlation with their teaching self-efficacy. Further, well-developed, properly implemented instruction has been shown to foster positive student engagement (Bundick, Quaglia, Corso, & Haywood, 2014), helping to alleviate what Stair et al. (2012) found as student teachers' highest area of concern: managing student discipline. Ng et al. (2010) concluded that preservice teachers believed their self-efficacy rested in their ability to manage student learning, such as through their own implementation of appropriate pedagogical and assessment strategies.

Research further indicates that building preservice teachers' self-efficacy should be an integral component of teacher preparation programs (Ng et al., 2010). Krysher, Robinson, Montgomery, and Edwards (2012) found that although student teachers may be confident in constructing lesson plans, most found it difficult to identify materials helpful in the development of curriculum. Even fewer student teachers in the Krysher et al. study perceived they understood how to effectively assess student learning. Bandura (1986) suggested that an individual's perceived self-efficacy is a determining factor of future behavior. Given these concerns, what are ways teacher educators can build preservice teachers' self-adequacy with respect to instructional implementation and assessment strategies?

Vygotsky's (1978) social constructivist ideal envisioned the success of individual development through cooperative environments (DiPardo & Freedman, 1988). Though at times it may seem as such, educators do not work alone. Rather, the efforts of educators themselves matter just as much as the efforts of their colleagues when determining student achievement (McDonald, Mohr, Dichter, & McDonald, 2007). Therefore, mutual values, standards, methods, and problems of practice among preservice teachers and their peers are important. McDonald et al. (2007) suggested that preservice teachers stop trying to manage instructional planning problems alone. Research has identified the importance of collaborative reflection in preservice teacher education—specifically regarding the importance of peer sharing of lesson plans (van Velzen & Wolman, 2009). Ruys, Van Keer, & Aelterman, (2012) suggested that student teachers “discuss their lesson plans extensively with peers, teacher educators, and mentor teachers in order to reveal implicit pedagogical knowledge” (p. 364). McDonald et al. (2007) also noted that many times teachers fail to see problems of their practice unless they “dare to inquire about them together” (p. 2). This manner of peer feedback promotes student-centered learning and encourages preservice teachers to share their work in front of larger audiences (DiPardo & Freedman, 1988).

The focus on structured instructional planning in teacher education programs has been identified as important in helping preservice teachers learn to develop lessons to attain high levels of pupil achievement. Sung (1982) found that pupils taught with less structured lesson plans were lower achieving. Purposeful instructional planning integrated with proactive strategies provides student teachers with pedagogical approaches necessary for achieving successful class sessions and control over what may happen with their pupils (Bond & Peterson, 2004; Duke & Madsen, 1991). However, the question remains: What combination of instructional planning practices, peer feedback, and personal reflective practice will benefit preservice teachers before they enter the professional education field?

Conceptual Framework

John Dewey has been recognized as the primary initiator of the concept of reflection in the 20th century (Hatton & Smith, 1995). Demarcated as purposeful thinking (Malisuwan, Nasongkhla, & Sujiva, 2015; Valli, 1997), self-reflection was originally defined by Dewey (1910) as “active, persistent, and careful consideration of any belief or supposed form of knowledge in the light of the grounds that support it, and further conclusions to which it tends, constitutes reflective thought” (p. 6). Valli (1997) described reflective teachers as those who “can look back on events; make judgments about them; and alter their teaching behaviors in light of craft, research, and ethical knowledge” (p. 70).

Reflective Practice

Known as the father of modern reflective practice, Schön (1983) identified two primary types of reflection: reflection-in-action and reflection-on-action. Reflection-in-action deals with the manner in which a practitioner purposefully draws upon a foundational knowledge while engaging in a particular task (Schön, 1983; Thompson & Pascal, 2012). Conversely, reflection-on-action is retrospective, “looking back upon action sometime after it has taken place” (Hatton & Smith, 1995, p. 34) for the purpose of developing further understanding and professional knowledge. Thompson and Pascal (2012) further advocated for an additional type of critical reflection: reflection-for-action. Specifically, they defined reflection-for-action as a “process of planning, thinking ahead about what is to come, so that we can draw on our experience (and the professional knowledge base implicit within it) in order to make the best use of the time resources available” (Thompson & Pascal, 2012).

Reflection has continued to be important in educational settings, including teacher education programs. Jay and Johnson (2002) proposed the following definition of reflection to guide participants in their teacher education program:

Reflection is a process, both individual and collaborative, involving experience and uncertainty. It is comprised of identifying questions and key elements of a matter that has emerged as significant, then taking one’s thoughts into dialogue with oneself and with others. One evaluates insights gained from that process with reference to: (1) additional perspectives, (2) one’s own values, experiences, and beliefs, and (3) the larger context within which the questions are raised. Through reflection, one reaches newfound clarity, on which one bases changes in action or disposition. New questions naturally arise, and the process spirals onward. (p. 76)

Greiman and Covington (2007) proffered the importance of reflection as a skill to be attained by preservice teacher candidates. However, as important as reflective practice may be to the aspiring practitioner, the reality is that practitioners lack time for reflection (Issitt, 2000) and space to reflect (Clutterbuck & Hirst, 2003), and many times a culture for reflection is not inherent in educators’ busy workplaces (Thompson & Pascal, 2012). Nevertheless, research supports the notion that reflection can be developed through using and modeling appropriate teaching practices. Valli (1997) advocated for teacher education programs to develop strategies to help students enhance their reflective capacity.

Peer Evaluation

Peer evaluation has been studied extensively in higher education settings (Dochy, Segers, & Sluijsmans, 1999; Liu, Lin, & Yuan, 2002; Nicol, Thompson, & Breslin, 2014; Olina & Sullivan, 2004; Sluijsmans, Dochy, & Moerkerke, 1999; Topping, 1998) and provides numerous benefits for its participants (Ozogul, Olina, & Sullivan, 2008). “A reciprocal process whereby students produce feedback reviews on the work of peers and receive reviews from peers on their own work” (Nicol

et al., 2014, p. 102), peer evaluation has been perceived to increase student time on task (Liu et al., 2002), increase individual accountability (Liu et al., 2002), and be understandable and helpful due to its more intelligible language (Falchikov, 2005). Nicol et al. (2014) suggested that feedback provided through the peer evaluation process should be conceptualized as dialogue and provides ample opportunity for students to construct meaning when applied to revisions to their work. Sadler (2010) has deemed peer evaluation as “a powerful strategy for higher education teaching” (p. 544).

The Tuning Protocol

The conceptual framework for this study is the tuning protocol, a popular reflective practice (Allen & McDonald, 1993; Easton, 1999, 2002, 2009). David Allen and Joseph McDonald created tuning protocols at the Coalition of Essential Schools (Easton, 1999). The term protocol is not regularly associated with the educational processes. The term may be associated with diplomacy to govern who greets whom first when governmental officials meet, it may be used to describe what enables computers to communicate successfully with one another, or it may refer to what ensures faithful replication of a medical treatment (McDonald et al., 2007). Protocols used in education, however, serve as a structural guide for groups of educators to formally reflect and provide peer feedback regarding the planning and implementation of instructional strategies that best meet students’ needs (Breidenstein, Fahey, Glickman, & Hensley, 2012; McDonald et al., 2007). The researcher-modified tuning protocol used in this study is depicted in Table 1.

Table 1

20-Minute Tuning Protocol for Lesson Plan Reflection and Revision

Item	Description	Time
Presentation	Presenter shares the problem or draft of the plan currently under development and provides relevant information about efforts to date.	5 minutes
Clarifying questions	Group asks clarifying questions of the presenter. Solutions are not yet offered.	2 minutes
Silent idea generation	Members write down ideas or suggestions.	3 minutes
Group discussion	The group discusses ideas and solutions. The presenter listens and records suggestions.	8 minutes
Reaction	Presenter reacts to any responses he or she chooses. This is their opportunity to reflect upon new ideas received.	2 minutes

Note. Protocol adapted from Easton, 2009.

The tuning protocol can be described as a method in which teachers present actual work before their peers in a structured, reflective discourse in order to receive thoughtful, critical feedback to “tune” the work to a higher standard (Allen, 1995; Easton, 1999; McDonald et al., 2007). Breidenstein et al. (2012), further defined tuning protocols as a “structured process that

allows a teacher to gather the multiple perspectives of colleagues on a piece of work for the purpose of improving it, refining it, or bringing it more ‘in tune’ with her stated goals or purposes” (p. 35). Educational tuning protocols were first developed as a method to critique the design and context for student exhibitions, but this same process is valuable for critiquing many components of education (Easton, 1999). For example, a tuning protocol can be beneficial when examining a unit or lesson plan, an evaluation system or rubric design, a classroom management plan, or problem solving strategies (Easton, 1999).

McDonald et al. (2007) stated that soon-to-be-professional educators are responsible for their own learning and may fail to see their own mistakes in practice unless they use professional peers. Research suggests preservice teachers have difficulty constructing and matching objectives and forms of evaluation (John, 1991, 2006; Joyce & Harootunian, 1964). The goal of the tuning protocol is to narrow the gaps that occur between the lesson plan and its perceived outcome (Breidenstein et al., 2012). By using honest feedback from professional peers to assist in identifying errors in planning, preservice teachers can make adjustments before implementing a lesson or teaching strategy. This open and honest conversation can build professional habits that encourage further inquiry and reflection (McDonald et al., 2007; Topping, Smith, Sawnsen, & Elliot, 2000).

Purpose and Objectives

To guide student teachers in lesson plan development, instruments must be identified to assist in this process, thereby increasing educational outcomes. The purpose of this research study was to determine student teachers’ perceptions of the use of a tuning protocol when using peer review to revise lesson plans. This study aligns with the American Association for Agricultural Education Research Priority Area 4: “Meaningful, Engaged Learning in All Environments: examine the role of motivation, self-regulation, metacognition, and/or reflection in developing meaningful, engaged learning experiences across all agricultural education contexts” (Doerfert, 2011, p. 9). The study had three objectives:

1. Determine student teachers’ perceptions of tuning protocol use during the student teaching experience.
2. Determine student teachers’ satisfaction with the tuning protocol.
3. Determine student teachers’ plans for future implementation and use of the tuning protocol.

Methods

The population of this study consisted of preservice agricultural education students ($N = 27$) from Iowa State University who participated in the student teaching experience during fall 2013, spring 2014, and fall 2014. The tuning protocol was implemented during the mid-term and final student teaching meetings as an opportunity for student teachers to receive peer feedback through a professional development model. For the mid-term student teaching meeting, student teachers were asked to bring a previously implemented lesson plan—in need of improvement—with accompanying student work for peer review. For the final student teaching meeting, student teachers were asked to bring a previously implemented lesson plan—the best they developed—along with accompanying student work for peer review.

Student teachers were randomly assigned to a group of three. In each group, one person was designated as the presenter, and the other student teachers served as peer reviewers/participants. One graduate student or university faculty member facilitated each group and acted as the official time keeper. For this study, the timing was modified from the original framework of 1 hour (Easton, 2009) to 20 minutes per student teacher to better fit into the time allotted for the mid-term and final student teaching meetings. Student teachers were provided the

tuning protocol as shown in Table 1 and directions for using the tuning protocol as it related to lesson plan review.

The student teacher presenter began the tuning protocol by identifying and sharing an area of concern from a previously implemented lesson for which guidance and advice was needed (Easton, 2009). During this stage, the student teacher presenter provided peers with a brief overview of the previously implemented lesson, focusing on the background, setting, objectives, teaching strategies, and examples of student work. During the initial presentation, peers took notes and silently reflected on the presenter's scenario. Easton (2002) identified the importance of allowing a presenter time to share without interruption.

Next, two minutes were allowed for peer reviewers to ask clarifying questions. In this second stage of the tuning protocol, peer reviewers did not give feedback but did take notes and made certain all aspects of the teaching episode were clear. Next, group members had three minutes to silently reflect and provide written feedback for the presenter. This third stage of the tuning protocol is known as silent idea generation (Easton, 2009).

The fourth stage of the tuning protocol provided peer reviewers a formal opportunity to discuss their ideas and thoughts, generated from the previous stages. For eight minutes, the presenter listened and took notes as peer reviewers provided feedback and engaged in reflective discussion regarding lesson improvement for future implementation and transfer to similar situations in the future. In the final stage of the tuning protocol, two minutes were provided for the presenter to reflect on and react to the peer feedback. The presenter was allowed to include any final thoughts about how the lesson could be improved in the future. The 20-minute tuning protocol session was then repeated with the remaining group members.

Student teacher participants were asked to answer two open-ended questions upon completion of the tuning protocol and peer review experience: (a) What are your perceptions of using the tuning protocol? and (b) What suggestions do you have for further implementation of the tuning protocol? Student teachers responded to these questions in a private group housed in the National Association of Agricultural Educators' (NAAE) Communities of Practice (CoP).

To accomplish objective one of the study, each response on the NAAE CoP was copied to a word document to maintain anonymity. A thematic analysis (Braun & Clarke, 2006) using open coding was used to "[identify] themes or categories that seem[ed] of interest" (Esterberg, 2002, p. 158). After the responses had been reviewed twice at a 2-week interval, recurring themes emerged. Intrarater reliability was calculated after coding the open-ended questions twice at 2-week intervals and determined to be high ($\alpha = .94$; Ary, Jacobs, & Sorensen, 2010). Frequencies and percentages were determined for each theme.

Objective two sought to determine student teacher satisfaction of the tuning protocol. Objective three sought to determine student teacher plans for future implementation and use of the tuning protocol. To accomplish these objectives, which built upon the data collected in 2013, a short survey was given to student teachers in spring 2014 and fall 2014. The instrument used a five-point scale (very satisfied, satisfied, neutral, dissatisfied, very dissatisfied) to determine student teacher attitudes towards the tuning protocol. The survey also asked if student teachers planned to use the tuning protocol in their future, and if so, how much. A four-option scale was used (no, maybe, some, often).

Qualitative data collected in this study was interpreted from a quantitative perspective (Creswell & Plano Clark, 2011) and allowed researches to understand both the breadth and depth of student teachers' perspectives (Johnson, 2014). The hybridized approach involved interpreting qualitative data that emerged through thematic coding, and using quantitative methods to determine frequency of responses.

Results

The population for this study was comprised of primarily undergraduate ($n = 24$, 88.9%), female ($n = 15$, 55.6%) student teachers. All student teachers participated in the midterm tuning protocol session. Two student teachers were absent for the final student teacher protocol. All students who participated in both the midterm and the final tuning protocol ($n = 25$) provided responses for a 92.6% response rate.

Objective one sought to determine the perceptions of student teachers when using the tuning protocol to revise lesson plans through peer feedback. The coded, open-ended responses fit into four main themes: benefits, drawbacks, structure, and future implementation. *Benefits* were statements in which student teachers identified a positive experience. *Drawbacks* were statements in which student teachers identified a negative experience. Statements were coded as *structure and format* when student teachers discussed one or more components of the protocol (e.g., time allotted per stage or specific stage requirements). Finally, when student teachers offered suggestions for future use of the tuning protocol, the related statements were coded as *recommendations for future implementation*. Table 2 depicts selected responses for each theme.

Table 2

Selected Responses Regarding the Tuning Protocol

Themes	Example responses
Benefits	<p><i>[The tuning protocol] forces me to actually come up with questions and ideas to present to my peers in the small group discussion.</i></p> <p><i>...it's always nice to have a second opinion on what to do, especially in teaching.</i></p> <p><i>Through this protocol, I have learned the importance of peer review.</i></p> <p><i>It allows us to look at our lesson designs and how we can improve on them to help better serve our students.</i></p>
Drawbacks	<p><i>I prefer the more informal discussion that occurs when teachers compare notes and give each other ideas for improvement.</i></p> <p><i>Not sure if this activity was beneficial to me at the current moment—I am unaware if I will be teaching these lessons in the future.</i></p> <p><i>I feel that I struggled with the first tuning protocol because I was absent from the [initial] meeting so I had no idea what was going on.</i></p> <p><i>I think we could get it done in a lot less time, except when we veer off and talk about experiences of stories.</i></p>
Structure	<p><i>The only thing I would change would be to shorten the time for discussion and more time using clarifying questions.</i></p> <p><i>I think it has value but the structure could be changed.</i></p> <p><i>I like how it is set up with timed parts of discussion, idea generation, and questions.</i></p> <p><i>I think it's beneficial to have the time structure and to actually stick to it in order for it to be truly effective.</i></p>

Table 2 (continued)

Selected Responses Regarding the Tuning Protocol

Themes	Example responses
Future implementation	<p><i>Require that [student teachers] discuss one lesson that will be taught with the cooperating teacher and design the lesson so that that their peers can critique it before they ever even teach the lesson (or use it in [Methods Course]).</i></p> <p><i>...I feel the spring student teachers should do this before they go into student teaching with a lesson.</i></p> <p><i>Maybe it could be done with my advisory committee two times a year or something.</i></p> <p><i>It would be nice if we had the ability to put this on the CoP [Communities of Practice] throughout the semester to get some feedback...</i></p>

Benefits of the tuning protocol were identified most frequently by the student teacher participants each semester: fall 2013 $f = 28$ (52.3%), spring 2014 $f = 41$ (63.3%), and fall 2014 $f = 9$ (64.3%). Table 3 displays the frequencies and percentages of total student teacher responses regarding their perceptions of benefits, drawbacks, structure, and future implementation after using the tuning protocol.

Table 3

Open Coded Responses for Student Teachers' Perceptions of Using the Tuning Protocol

Themes	Fall 2013 $n = 9$ Responses = 44 ^a		Spring 2014 $n = 12$ Responses = 65 ^a		Fall 2014 $n = 4$ ^b Responses = 14 ^a	
	f	%	f	%	f	%
Benefits	28	52.3	41	63.6	9	64.3
Drawbacks	2	18.5	3	4.5	1	7.1
Structure	4	23.1	6	9.1	3	21.4
Future implementation	10	6.2	15	22.7	1	7.1

^aTotal responses represent all responses given by student teachers; all students gave more than one response.

^bTwo student teachers did not provide feedback after using the tuning protocol.

Objective two sought to determine student teachers' satisfaction as they used the tuning protocol. Objective three sought to determine student teachers' plans to implement the tuning protocol in their future. Table 4 displays frequencies and percentages of student teachers' responses for satisfaction and future implementation after using the tuning protocol. Eleven student teachers (64.7%) were *Satisfied* with the outcomes of the tuning protocol process in revising their lesson plans. Three student teachers (17.6%) were *Very Satisfied* with the outcomes; two student teachers (11.8%) remained *Neutral*; while one (5.9%) student teacher was *Dissatisfied* with the tuning protocol process. As for future use in their professional careers, five student teachers (29.4%)

identified *Maybe*, ten (58.8%) identified *Some* use while two (11.7%) identified that they would implement the tuning protocol *Often*.

Table 4

Student Teachers' Satisfaction with and Plans to Use the Tuning Protocol (n = 17)

	Spring 2014 and Fall 2014	
	<i>f</i>	%
Satisfaction with tuning protocol outcomes		
Very satisfied	3	17.6
Satisfied	11	64.7
Neutral	2	11.8
Dissatisfied	1	5.9
Very dissatisfied	0	0.0
Future use		
No	0	0.0
Maybe	5	29.4
Some	10	58.8
Often	2	11.7

Conclusions and Discussion

Preservice teacher candidates found peer feedback beneficial when reflecting on previously implemented lesson plans through the tuning protocol. Feedback was generated to provide for future improvement of lesson design, implementation, and the impact of teaching through peer discussion inherent to the tuning protocol. "Discussing one's own lesson plans creates opportunities for preservice teachers to consider the adequateness of the instructional decisions and to think through the link between their lesson plan and classroom practice" (Ruys et al., 2012, p. 364). The tuning protocol formalizes a process for student teachers to discuss their lessons. The purpose of the tuning protocol is to provide an environment for professional discussion and to initiate conversation that encourages "groups to explore ideas deeply through student work, artifacts of educator practice, texts relating to education, or problems and issues that surface during the day to day lives of educators" (Easton, 2009, p. 8). The formal reflective tuning protocol promotes student-centered learning (DiPardo & Freedman, 1988) among the preservice teachers through a constructivist approach (Vygotsky, 1978). One student teacher in this study expressed the concern to better serve her students when she stated, "[the tuning protocol] allows us to look at our lesson designs and how we can improve on them to help better serve our students." This indicates a reflection-on-action thought process that transitioned into a reflection-for-action (Thompson & Pascal, 2012) process used to ensure a positive impact on students in the future.

By recognizing concerns and tailoring educational materials through the tuning protocol, preservice teachers acknowledged concerns about learner motivation that could positively influence student achievement (Fuller & Bown, 1975; Stair et al., 2012). One student teacher stated, "Through this protocol, I have learned the importance of peer review." Several studies have noted positive effects of preservice peer evaluation (Ozogul et al., 2008). The preservice teacher being

evaluated and the peer performing the evaluation can both benefit from the peer-review process (Topping et al., 2000).

Student teachers' satisfaction regarding the tuning protocol may have affected their plans to implement the tuning protocol in their future careers. Only one student was dissatisfied with the tuning protocol; however, all student teachers had plans to either *maybe* implement the tuning protocol, or implement it *some* or *often* in the future. It could be that the student teacher who was dissatisfied found the tuning protocol purposeful and useful enough to use it in the future but had a poor experience or poor feedback initially during the student teaching meeting.

Implications and Recommendations

Although conclusions from this study are limited to the student teachers who participated in the tuning protocol, they serve as a contribution to the body of research regarding instructional planning and reflective practice used during the student teaching experience. Student teachers deemed the tuning protocol to be a beneficial tool; however, it is important to closely examine drawbacks noted by the participants. Easton (2002) suggested that the tuning protocol can be adapted to fit specific needs. One student teacher stated, "Not sure if this activity was beneficial to me at the current moment—I am unaware if I will be teaching these lessons in the future."

Priority should be made for creating time (Clutterbuck & Hirst, 2003), space (Issit, 2000), and a culture (Thompson & Pascal, 2012) for reflection within the teacher education program. It is critical that teacher educators implement activities during the student teaching experience that enhance the reflection process and help student teachers formally consider values, beliefs, and experiences that relate to a larger educational context (Jay & Johnson, 2002). The tuning protocol should be strongly considered for implementation throughout the teacher education program. Also, student teachers should be informed that the tuning protocol can be used for educational problems beyond lesson plan improvement. Though lesson plan improvement is a worthy outcome, it is also important that students learn how to effectively collaborate with their peers, which is a critical part of professional development (McDonald et al., 2007).

The addition of the tuning protocol to the preservice teacher preparation experience assists student teachers in developing the "habit of reflective thinking and knowing-in-action" (Greiman & Bedtke, 2008, p. 56). To further enhance the reflective practice of preservice teacher candidates, the tuning protocol should be introduced in coursework and practicum experiences prior to the capstone student teaching experience. By using the tuning protocol earlier in the teacher education program, candidates will further develop skills to enhance open and honest inquiry and reflection (McDonald et al., 2007) regarding their teaching practice. Further research should be conducted with agricultural education teacher preparation programs throughout the nation to clarify and add breadth to this line of study.

For future studies, it would be useful to use control and experimental groups (e.g., with and without a graduate student facilitator). The use of a facilitator may change the manner in which students respond to one another, provide feedback, and use decision-making skills during the tuning protocol (McDonald et al., 2007). Further studies should also investigate each component of the tuning protocol to determine which aspect student teachers perceive to have the greatest benefit.

"Teachers seek out one another for advice and feedback, and not just in the formal processes of the tuning protocol" (Easton, 2002, p. 30). Time must be set aside during the student teaching experience for student teachers to have the opportunity to seek collaboration with one another (Thompson & Pascal, 2012; Valli, 1997). We introduced and initially implemented the tuning protocol during the midterm student teacher meeting as a professional development activity. Paulsen et al. (2015) found that student teachers' concerns "mirrored the progression of Moir's (1990/2011) phases of first year teaching" (p. 221). Providing professional development activities

which actively engage peers in reflection can positively impact student teachers during a challenging time in the student teaching experience.

Implementation of the tuning protocol and peer-evaluation process in teacher preparation programs can provide students with a vehicle congruent with a Vygotskyian (1978) social constructivist approach to enhance individual development through cooperative environments (DiPardo & Freedman, 1988). Additionally, the tuning protocol can assist preservice teachers in building confidence in lesson planning and activity design. With this confidence, newly trained agricultural education teachers will be able to better motivate future generations of learners.

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