

# Concerns Expressed by Agricultural Education Preservice Teachers in a Twitter-Based Electronic Community of Practice

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*Student teaching is an important capstone experience in which preservice teacher candidates begin to learn the skills they need to become effective teachers. During this experience, candidates develop concerns for themselves as well as for their students. As preservice teachers encounter challenges and obstacles, it is important for them to communicate these concerns. Preservice teachers from Iowa State University participated in a Twitter-based electronic community of practice to express their teaching concerns. This study was designed to identify preservice teachers' concerns and determine if they aligned with Moir's (1990/2011) phases of first-year teaching. By understanding preservice teachers' concerns in real time, teacher educators can better address the candidates' self-adequacy concerns throughout the teacher preparation program. We recommend that preservice teachers express their concerns during student teaching through an electronic community of practice so teacher educators can address concerns in a timely manner.*

Keywords: preservice teachers; phases of first-year teaching; preservice teacher concerns; community of practice; Twitter

Student teaching is the capstone experience in which preservice agricultural education teacher candidates gain the skills they need to become professionals in the field of education (Krysher, Robinson, Montgomery, & Edwards, 2012). Student teaching has been identified as a “critical period” (Edgar, Roberts, & Murphy, 2011, p. 15) with a significant impact on prospective teachers (Ronfeldt & Reininger, 2012). Important components of the student teaching experience include time, experience, and support (Krysher et al., 2012); when implemented as part of a quality teacher education program, these components lead to positive novice teacher efficacy. However, this capstone experience can be challenging and present obstacles for preservice teacher candidates (Knobloch & Whittington, 2002).

Valencia, Martin, Place, and Grossman (2009) identified challenges inherent in the complexity of setting and intricacy of interactions within the student teaching experience. Preservice teachers' have identified concerns such as “working conditions, including professional autonomy, poor student motivation, student discipline problems, [and] lack of recognition and support from administrators” (Knobloch & Whittington, 2002, p. 331). Preservice teachers' ability to successfully manage these factors may determine whether they enter and remain in the teaching profession (Dahlgren & Chiriac, 2009). Garton and Chung (1997) claimed that upon graduation, many teachers of agriculture felt they lacked requisite skills to become successful. Research has shown that two of the most important needs of preservice teachers are mastering the integration of technical content and incorporating current advances in technology into the

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curriculum (Duncan, Ricketts, Peake, & Uessler, 2006). Darling-Hammond (1997) found that preservice teachers who entered the teaching profession were “highly sensitive to their perceptions of their working conditions” (p. 23). Although technical agricultural skills are important, student motivation and managing student behavior have also been identified as concerns for many teachers (Duncan et al., 2006).

The teacher-concerns model (Fuller & Bown, 1975) has been used in teacher education research (Chan, 2004; Fritz & Miller, 2003; Miksza & Berg, 2013) to better understand preservice teachers’ concerns. Fuller and Bown (1975) hypothesized that “teacher education programs could be improved if they were designed to meet preservice teachers’ needs according to a trajectory of professional development” (Miksza & Berg, 2013, p. 45). Improved teacher education programs should help preservice teachers meet professional goals, which may lead them to a sense of satisfaction in a teaching career (Chan, 2004).

Many researchers have examined the concerns of beginning teachers (Fritz & Miller, 2003; Hillison, 1977; Miksza & Berg, 2013; Miller & Schied, 1984; Rolheiser & Hundey, 1995). These concerns can change over time (Claycomb & Petty, 1983; Garton & Chung, 1997). Stair, Warner, and Moore (2012) stated that two of the important concerns beginning agricultural education teachers face are dealing with their personal adequacy in teaching and determining their individual teaching role. Adequacy concerns include lack of subject matter expertise as well as appropriate use of classroom management techniques. In agricultural education, the teaching role also includes various aspects of coordinating a comprehensive, school-based agricultural education program, such as managing supervised agricultural experience programs and advising the FFA chapter (Stair et al., 2012). Miller and Schied (1984) observed that agricultural education teachers found advising the FFA chapter, administering the program, and implementing supervised agricultural experience projects to be the most challenging tasks. Concerns of beginning teachers have been reported frequently in research studies, but do preservice teachers experience the same concerns?

Hillison (1977) found that preservice teachers had more concerns than first-year agricultural education teachers. Miksza and Berg (2013) found that preservice teachers were initially concerned with balancing work-home issues and personal evaluations, but these concerns were no longer apparent by the middle of the student teaching experience. In a study of agricultural education preservice teachers, Fritz and Miller (2003) found that self-adequacy concerns were the most frequently reported type of concern. Fritz and Miller (2003) further posited that “student teachers often need to discuss [their] concerns or other problems” (p. 48) and noted that “one way for student teachers to reflect on their daily concerns and receive feedback is to communicate with other student teachers and supervisors” (p. 51).

One way teacher educators have facilitated preservice teacher reflective communication during the student teaching experience is by forming a community of practice (Cumming-Potvin, 2009; Ertl, 2010; Evans & Powell, 2007).

### **Community of Practice**

Community of practice (CoP), a term traditionally attributed to Lave and Wenger (1991), describes an approach to learning with an emphasis on “situated social interaction...[which] achieves authentic, motivated learning of what is needed to be known about the complexities of real practice” (Cox, 2005, p. 528). Wenger, McDermott, and Snyder (2002) further described CoPs as “groups of people who share a concern, a set of problems, or a passion about a topic, and who deepen their knowledge and expertise in this area by interacting on an ongoing basis” (p. 4). With a foundation firmly planted in constructivist theory (Bruner, 1966), CoPs manifest a shift in focus from teaching to learning in social settings (Adler, 1998).

Hildreth and Kimble (2004) identified several areas in which CoPs have been implemented: within classrooms, to support student learning, through informal educational

settings, in higher and adult education, for teacher support, and in virtual environments for supporting new and existing teachers. CoPs have been used with in-service teachers to allow communication with other professionals in the field and provide an opportunity to remain informed of the latest news in education (Brown, 2012; Ferriter, 2010; Risser, 2013). Recent research supports the notion that CoPs are effective in teacher professional development (Cuddapah & Clayton, 2011; Lock, 2006; Yildirim, 2008), support the co-construction of strong teacher efficacy beliefs (Takahashi, 2011), and have the potential to increase educator effectiveness and enhance student learning (Lieberman & Miller, 2011).

### **Web 2.0 Use in Higher Education**

Since the term “Web 2.0” was coined (O’Reilly, 2005), much scholarly inquiry has focused on its use in higher education (Ebner, Lienhardt, Rohs, & Meyer, 2010). Web 2.0 refers primarily to the “social use of the Web which allow people to collaborate, to get actively involved in creating content, to generate knowledge and to share information online” (Grosbeck, 2009, p. 478). Social media applications that fall under the Web 2.0 umbrella include social networking sites, social bookmarking, media sharing, wikis, RSS syndication, blogs, and microblogs (Grosbeck, 2009; Yang, 2009). The primary benefit of using Web 2.0 technologies in higher education is the opportunity to facilitate student-centered social constructivist pedagogies (Cochrane & Bateman, 2010), which serve to enhance student engagement (Thoms, 2012). Lewis and Rush (2013) suggested that social media use in higher education can be effective “in building the networks of practice which can underpin the development of learning professionals” (p. 34).

### **Microblogging as a Community of Practice**

Use of blogs and microblogs has recently received much interest in higher education (Halic, Dee, Paulus, & Spence, 2010). These tools have been found to “facilitate intellectual exchange among students” (Wee Sing Sim & Foon Hew, 2010, p. 155), enhance the social construction of knowledge (Leslie & Murphy, 2008), improve reflective practice (Xie, Ke, & Sharma, 2008), and help to build a community of learners (Thoms, 2012). Derived from blogs, microblogs are “restricted to 140 characters per post...[and are] enhanced with social networking facilities” (McFedries, 2007, p. 84). A primary advantage of using microblogging applications is the ability to access them via web interface, mobile phones, short message services (SMS), and instant messaging (IM) tools (Ebner et al., 2010). Microblogging applications such as Twitter offer great potential for teacher education (Wright, 2010). Ebner et al. (2010) suggested that microblogging can facilitate “asking questions, giving opinions, changing ideas, sharing resources, and reflection” (p. 94).

The use of an electronic CoP via Twitter can also provide preservice teachers with an opportunity to build relationships and learn from each other (Wenger, 2007). By communicating and expressing concerns through electronic dialogue, preservice teachers can develop critical reflections as well as provide ongoing support throughout a student teaching experience (Whipp, 2003). Identifying student teacher concerns can also “allow teacher educators to address concerns more appropriately during coursework, and teacher in-service in an effort to increase retention and support of novice teachers” (Stair et al., 2012, p. 154). Furthermore, McCulloch, Burris, and Ulmer (2011) recommended that supervisors address known concerns during the teacher preparation program because this may lead to higher confidence levels in preservice teachers prior to the student teaching experience.

Understanding preservice teachers’ concerns is imperative, but knowing how these concerns change over time is also important. Wang, Odell, and Schwille (2008) indicated that “beginning teachers’ initial beliefs and teaching practices play an important role in shaping, impeding, or facilitating what and how they learn” (p. 147) during the student teaching

experience. It is vital that mentors understand how beginning teachers learn and express concerns through the student teaching experience.

### **Moir's Phases of First-Year Teaching**

Moir (1990/2011) postulated that novice teachers progress through a series of phases during their first year of teaching. Moir (1990/2011) further posited that novice teachers' attitudes toward teaching were at a high point prior to beginning teaching, at a low point in the middle of the year, and then increased gradually toward another high point near the end of the school year. The phases of first-year teaching have not previously been applied to student teaching; however, the phases of first-year teaching are important in teacher education because teacher concerns follow a pattern (Moir, 1990/2011). This study sought to identify concerns of preservice teachers who participated in a Twitter-based CoP and determine if these concerns were congruent with Moir's (1990/2011) phases of first-year teaching.

### **Conceptual Framework**

Fuller, Parsons, and Watkins (1974) suggested that teachers express concerns regarding teaching and that these concerns change over time. The conceptual framework for this study was guided by the teacher-concerns models for preservice teachers (Fuller, 1969) and in-service teachers (Fuller et al., 1974). Fuller (1969) found that preservice teachers had self-adequacy concerns early in their experience but expressed more concerns about their pupils in the latter weeks of their student teaching experience. Fuller (1969) identified three primary phases of concern common to preservice teachers: pre-teaching phase, early teaching phase, and late teaching phase. The pre-teaching phase included the preservice teachers' first contact with the pupils and orientation to the experience. In this phase, preservice teachers had not identified their own concerns because they had yet to enter into the teaching aspect of the student teaching experience. In the early teaching phase, preservice teachers tended to be more concerned with self-adequacy issues as a teacher. In this phase, preservice teachers asked themselves, "Where do I stand?" and considered the amount of support they might receive from school administration as well as from their peers. They also asked themselves, "How adequate am I?" as they began to worry about classroom management issues. In the late teaching phase, preservice teachers were more anxious about their students' learning than their own issues of adequacy.

Fuller et al. (1974) studied the relationship between preservice and in-service teachers' concerns and reported seven teaching concern categories: (a) one's role as a teacher, (b) personal adequacy of teaching pupils, (c) personal relationship with the students, (d) pedagogical performances, (e) student learning, (f) professional impact, and (g) non-teaching concerns. Next, they grouped these concern categories into four primary areas: self-adequacy, teaching tasks, teaching impact, and non-teaching concerns (Fuller et al., 1974). Self-adequacy concerns are primarily survival concerns, such as supervisors' approval, administrative support, relationships with other teachers, subject matter adequacy, and discipline problems. Teaching task concerns relate to the teacher's anxiety regarding teaching effectiveness, including perceptions of the students' feelings toward them as the teacher. Teaching impact concerns are concerns regarding student success. Fuller (1969) proposed that these stages follow a pattern; teachers address problems in one stage before moving to the next.

The conceptual framework for this study is further based upon the work of Fritz and Miller (2003) and Moir (1990/2011). Building on Fuller's (1969) concern categories and Fuller et al.'s (1974) research, Fritz and Miller (2003) studied concerns of preservice agricultural education teachers. These researchers used WebCT, an electronic classroom management tool, to create a virtual learning environment during the student teaching experience. They examined how preservice teachers communicated in this electronic CoP and discovered that in addition to

sharing concerns, student teachers gave and responded to advice and shared lesson plan ideas (Fritz & Miller, 2003).

Similar to Fuller (1969), Moir (1990/2011) identified six attitudinal phases of beginning teaching from her work in studying nearly 1,500 beginning teachers in California. Beginning teachers progress through the attitudinal phases of anticipation, survival, disillusionment, rejuvenation, reflection, and then again anticipation in their first year of teaching (Figure 1).

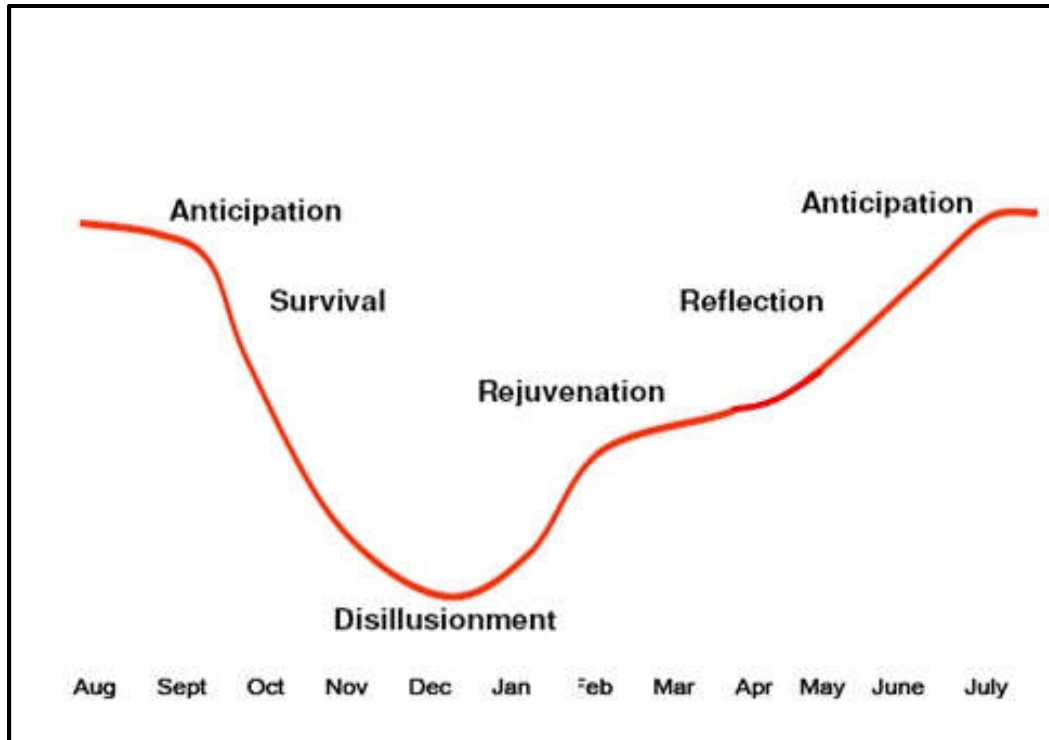


Figure 1. Phases of first-year teachers' attitude toward teaching. From "Phases of first-year teaching," by E. Moir, 1990, *California New Teacher Project Newsletter*: California Department of Education. Copyright 1990 by Ellen Moir. Reprinted with permission.

According to Moir (1990/2011), the anticipation phase occurs at the beginning of the school year when first-year teachers are enthusiastic for their first teaching position. Near the end of the first month of school, beginning teachers enter the survival phase as they confront challenges they did not experience during their student teaching experience; this leads to lower self-esteem. The third phase is disillusionment, a phase of six to eight weeks of nonstop work during which beginning teachers realize that teaching may not be proceeding as planned. The disillusionment phase morphs to one of rejuvenation following a winter break as beginning teachers begin to work through problems and issues. Reflection follows as beginning teachers consider various changes they need to make in their teaching and how they will implement needed changes in the future. This phase brings them into the last phase of anticipation, when they again become excited about teaching in the upcoming year.

Although not every teacher progresses through each phase at the same time, understanding these phases is useful for teachers, administrators, and faculty involved in the induction process (Moir, 1990/2011). If preservice teacher concerns align with the phases of a beginning teacher, could teacher preparation programs and cooperating teachers be better prepared to anticipate and proactively address preservice teachers' concerns?

## Purpose and Objectives

The purpose of this descriptive study was to investigate concerns expressed by agricultural education preservice teachers who participated in a Twitter-based CoP and relate these concerns to phases of beginning teacher development. This study is aligned with the American Association for Agricultural Education Research Priority Areas, Priority 4: Meaningful, Engaged Learning in All Environments (Doerfert, 2011, p. 9), specifically the call for research that can “develop and assess various learning interventions and delivery technologies to increase problem-solving, transfer of learning, and higher order thinking across all agricultural education contexts” (Doerfert, 2011, p. 9). The study had three objectives:

1. Identify the frequency with which agricultural education preservice teachers communicate in an electronic community of practice.
2. Identify the concerns expressed by agricultural education preservice teachers in an electronic community of practice.
3. Determine if concerns expressed by these preservice teachers align with Moir’s (1990/2011) phases of first-year teaching.

## Methods

The population for this study consisted of a convenience sample of spring and fall agricultural education preservice teachers from Iowa State University ( $N = 26$ ) who participated in an electronic CoP via a private group within the social media platform Twitter. Prior to the student teaching experience, preservice teachers were trained in how to use Twitter as an electronic CoP. Participants were required to post to Twitter a minimum of once per week over the 14-week student teaching experience. Specifically, preservice teachers were asked to share their thoughts and concerns, ask questions, and provide feedback to each other weekly throughout the capstone experience. Preservice teachers were asked to tweet only within the private Twitter group. Upon completion of the capstone experience, the tweets ( $N = 2,071$ ) were collected and coded according to teacher-concern categories (Fritz & Miller, 2003; Fuller, 1969; Fuller et al., 1974) and Moir’s (1990/2011) phases of first-year teaching.

### Objective 1: Frequency of Participation

Each preservice teacher had a personal identification number associated with his or her tweets. Frequency of participation in the electronic CoP was determined by the total number of tweets and average tweets per student.

### Objective 2: Preservice Teachers’ Concerns

Tweets were analyzed using a classical content analysis approach in which researchers made “replicable and valid inferences from texts (or other meaningful matter) to the context of their use” (Krippendorff, 2013, p. 24). The tweets were coded using a provisional coding system that used a predetermined set of codes developed from literature reviews and from the conceptual framework of the study (Miles & Huberman, 1994). We used specific categories of teacher concerns developed by Fuller et al. (1974) and Fritz and Miller (2003). Each tweet received one of six predetermined codes (Table 1).

Fuller et al. (1974) previously determined content validity of the teacher-concern codes through group interviews and counseling sessions with teachers. To ensure coding was consistent with the literature, we consulted *A Manual for Scoring the Teacher Concerns Statement* (Fuller & Case, 1972) throughout the coding process. Intrarater reliability was established as excellent for

the present study ( $\alpha = .95$ ) after coding the postings twice at a 4-week interval (Wier, 2005). Discrepancies in coding were coded a third time.

Table 1

*Tweet Categories and Codes*

Code	Concern category
0	Non-teaching concern
1	Self-adequacy concerns
2	Teaching concerns
3	Teaching impact
4	Responding to a question or giving advice
5	Sharing lesson plans or ideas

### Objective 3: Concern Alignment

Each tweet also received a code based on Moir's (1990/2011) phases: anticipation (1), survival (2), disillusionment (3), rejuvenation (4), and reflection (5). Coded tweets were organized by date and week and then aligned with Moir's (1990/2011) attitudinal phases of first-year teaching. Some of the tweets aligned with more than one phase and were counted in each category as appropriate. We reviewed Moir's (1990/2011) phases throughout the coding process to ensure consistency. Postings were coded twice at a 4-week interval and deemed to have excellent intrarater reliability ( $\alpha = .95$ ) (Wier, 2005). Tweets with coding discrepancies were coded one additional time prior to analysis.

Frequencies and percentages were calculated and analyzed using Microsoft Excel. Based on the design of this study, limitations are evident. Results should not be generalized beyond the convenience sample studied; however, implications for teacher education may be relevant in similar situations.

## Results and Findings

### Objective 1: Frequency of Participation

Table 2 shows the frequency and percentage of tweets posted per student during the 14-week student teaching experience by semester. The average number of tweets per student over both semesters was 76.9 (3.8%). The number of tweets posted per student ranged from 16 (0.7%) to 301 (14.5%).

Table 2

*Frequencies and Percentages of Tweets (N = 2071) per Student Teacher by Semester*

Student teacher	Tweets	
	<i>f</i>	%
Fall		
1	301	14.5
2	113	5.4
3	47	2.3
4	42	2.0
5	28	1.3
6	60	2.8
7	76	3.6
8	101	4.8
Spring		
9	38	1.8
10	51	2.5
11	88	4.2
12	32	1.5
13	16	0.7
14	86	4.1
15	135	6.5
16	46	2.2
17	132	6.3
18	41	1.9
19	36	1.7
20	20	0.9
21	62	3.0
22	71	3.4
23	116	5.6
24	133	6.4
25	144	6.9
26	56	2.7
Average tweets per student		
	79.6	3.8
Total tweets		
	2,071	100

**Objective 2: Preservice Teachers' Concerns**

Table 3 shows the frequency of tweets posted by category of concern as identified by Fritz and Miller (2003) and Fuller et al. (1974). Tweets that dealt with the preservice teachers' teaching experiences were categorized as teaching concerns and coded to the appropriate category. Tweets that were not directly related to teaching were coded as non-teaching concerns.



Overall, preservice teachers in this CoP tweeted more teaching concerns ( $f = 1,550$ ) than non-teaching concerns ( $f = 521$ ).

Table 3

*Frequencies and Percentages of Student Teacher Concern Tweets by Semester*

Concern	Fall 2012 tweets ( $n = 768$ )		Spring 2012 tweets ( $n = 1,303$ )		Total tweets ( $N = 2,071$ )	
	$f$	%	$f$	%	$f$	%
Non-teaching	196	25.5	325	25	521	25.2
Teaching	572	74.5	978	75	1550	74.8
Teaching category						
Self-adequacy	105	18.4	514	52.5	619	39.9
Teaching impact	82	14.3	119	12.2	201	13.0
Teaching task	53	9.3	120	12.3	173	11.2
Other						
Responding or giving advice	289	50.5	174	17.8	463	29.9
Sharing lesson plan ideas	43	7.5	51	5.2	94	6.0

Self-adequacy tweets included preservice teachers' concerns about their role as a teacher and their personal adequacy in teaching their pupils. Self-adequacy had the most tweets of any concern category ( $f = 619$ , 39.9%). Teaching impact tweets dealt with preservice teachers' concerns about pupils' learning and their own professional impact. Teaching impact was the second highest teaching concern category ( $f = 201$ , 13.0%). Teaching task concern tweets included preservice teachers' concerns about personal relationships with students and their own pedagogical performance. Teaching task had the fewest tweets of any teaching concern category ( $f = 173$ , 11.2%). A total of 557 (35.9%) tweets dealt with other teaching-related activities. These preservice teachers responded to and gave advice ( $f = 463$ , 29.9%) more frequently than they shared lesson plan ideas ( $f = 94$ , 6.0%).

**Objective 3: Concern Alignment**

Table 4 shows the frequency of tweets according to Moir's (1990/2011) attitudinal phases of first-year teaching. Preservice teachers in this CoP posted more tweets regarding anticipation in the pre-teaching week than in any other week ( $f = 279$ , 93.6%). Tweets in this category included preservice teachers' comments about their excitement about teaching and their anticipation of beginning the student teaching experience.

Table 4

*Frequency and Percentage of Student Teacher Tweets Aligned with Moir's (1990/2011) Attitudinal Phases of First-Year Teaching (N = 2,071)*

Tweets	Anticipation (n = 298)		Survival (n = 551)		Disillusionment (n = 448)		Rejuvenation (n = 369)		Reflection (n = 404)	
	f	%	f	%	f	%	f	%	f	%
Anticipation	279	93.6	94	17.1	22	4.9	21	5.7	24	6.0
Survival	19	6.4	274	49.7	48	10.7	21	5.7	19	4.7
Disillusionment	0	0	173	31.4	293	65.4	31	8.4	11	2.7
Rejuvenation	0	0	8	1.4	85	19.0	285	77.2	125	31.0
Reflection	0	0	2	0.3	0	0	11	2.9	225	55.7

*Note:* Anticipation phase = weeks 0–2; survival phase = weeks 3–5; disillusionment phase = weeks 6–9; rejuvenation phase = weeks 10–12; reflection phase = weeks 13–14.

Survival—the second attitudinal phase of a beginning teacher—is described as learning the teaching role, which happens rapidly and may quickly become overwhelming (Moir, 1990/2011). For preservice teachers in this CoP, survival concerns regarding teaching were at the highest during weeks 1, 2, and 3 ( $f = 274, 49.7\%$ ) as shown in Table 4. In this phase, they tweeted about how to overcome the challenges of managing multiple events and how to survive planning for and teaching in the classroom.

The third phase of first-year teaching is disillusionment. In this phase, teachers are stressed about their teaching role and begin to question their competence and commitment toward teaching (Moir, 1990/2011). In this phase, preservice teachers tweeted about creating lesson plans, operating equipment, and grading homework. Preservice teachers in this CoP composed more tweets regarding disillusionment in weeks 4, 5, and 6 ( $f = 293, 65.4\%$ ) of student teaching than in any other week (Table 4).

The fourth phase of first-year teaching is rejuvenation. In this phase, there was an increase in the number of tweets regarding positive attitudes toward teaching, such as comments that a preservice teacher had an enjoyable week of teaching. Table 4 shows that weeks 10 and 11 had the most tweets about rejuvenation ( $f = 285, 77.2\%$ ).

The fifth phase of first-year teaching is reflection. During this phase, preservice teachers tweeted about what went well and what did not go well throughout the overall experience. Table 4 shows that that weeks 12, 13, and 14 had the most tweets about reflection ( $f = 225, 55.7\%$ ), which is more than all previous weeks combined ( $f = 13, 0.6\%$ ).

Figure 2 provides a graphical depiction of the preservice teachers' tweets by week and their relationship to Moir's (1990/2011) attitudinal phases of first year teaching.

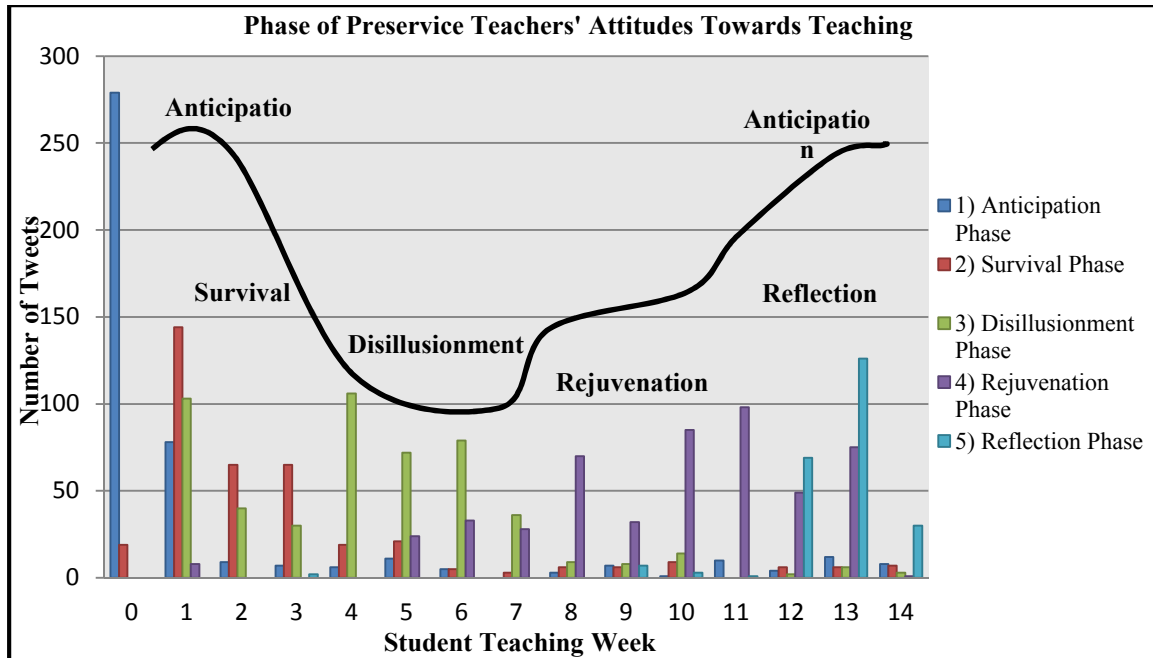


Figure 2. Frequency of student teacher tweets overlaid with attitudinal phases of first-year teaching. Week 0 is the pre-teaching week. Adapted with permission from "Phases of first-year teaching," by E. Moir, 1990, *California New Teacher Project Newsletter*: California Department of Education. Copyright 1990 by Ellen Moir.

### Conclusions and Discussion

Findings from this study support the notion that preservice teachers are willing to communicate their concerns using electronic communication tools such as Twitter in an electronic CoP; this aligns with the findings of Wright (2010). Further, it is evident that Twitter can serve as an important tool for student engagement (Thoms, 2012) and interaction (Grosseck, 2009) in a professional CoP. Risser (2013) indicated that teachers use Twitter to communicate with other professionals, get updates on the latest news in education, and share resources with each other. The present study supports previous findings (Brown, 2012; Ebner et al., 2010; Ferriter, 2010) that preservice teachers share lesson plan ideas and communicate with each other by responding to and giving advice. As technology changes, it is important to provide online electronic communities where preservice teachers are able to support each other and express concerns (Risser, 2013).

This study also supports the findings of previous research regarding the type of concerns preservice teachers express (Fritz & Miller 2003; Fuller, 1969; Fuller et al., 1974; Stair et al., 2012). Fuller et al. (1974) and Fritz and Miller (2003) found that self-adequacy concerns were the most common type of concern for preservice teachers. Self-adequacy concerns were the most common type of concern in the present study as well. Miksza and Berg (2013) indicated that preservice music teachers faced basic self-concerns such as balancing home-work life and discipline problems. It is also vital to recognize that preservice teachers may have different self-adequacy concerns depending on the teaching context (Miksza & Berg, 2013).

Understanding teaching concerns in preservice agricultural teacher education programs will allow teacher educators to develop successful pedagogies that can lower preservice teachers' self-adequacy concerns (Stair et al., 2012). Although one may argue that novice teachers naturally face the most difficulties because they are adapting to the classroom, meeting the needs of

students, and managing student behavior, it is still important to address their concerns. Preservice teachers will become teachers who are the “single most important variable related to student achievement” (Knobloch & Whittington, 2002, p. 331).

Concerns expressed by preservice teachers in this study mirrored the progression of Moir’s (1990/2011) phases of first-year teaching. As preservice teachers complete coursework at the end of their last semester as a student, anticipation for the beginning of the student teaching experience builds. This anticipation helps preservice teachers work through the first few weeks of the student teaching experience (Moir, 1990/2011). In the survival phase, preservice teachers struggled to keep themselves afloat as they became consumed with the day-to-day routine of teaching. Preservice teachers in this study tweeted their concerns regarding time-management issues and their struggle with creating lesson plans. At this point, the preservice teachers may have perceived that they were not adequately prepared to face challenges during the student teaching experience. During the rejuvenation phase, which usually occurs during an extended school break, teachers can put past problems behind them (Moir, 1990/2011). The 14-week student teaching experience in this study did not span a winter or summer break, but preservice teachers did experience the rejuvenation phase prior to the end of the student teaching experience as they anticipated their future career paths. It is possible that their rejuvenation may have been attributed to attending the National FFA Convention late in the fall student teaching experience or returning to the classroom after spring break in the spring semester. Preservice teachers expressed reflection as they approached the end of student teaching by tweeting about challenges and successes they experienced. During the final anticipation phase, the preservice teachers tweeted various changes they planned to make prior to entering the teaching profession.

### **Implications and Recommendations**

This study provides a model for a Twitter-based CoP. A number of electronic CoPs have been used in programs that support preservice and novice teacher development (Risser, 2013). Electronic CoPs can be helpful to preservice, novice, and veteran teachers. Preservice teachers should have the opportunity to participate in an electronic CoP during the student teaching experience as a way to express concerns and secure support from peers.

This study also has implications for teacher education programs. Miksza and Berg (2013) indicated that the cooperating teacher and university supervisor have “potential influence not only on the student teacher’s specific types of concerns but also on the student teacher’s development toward an increased focus on student impact” (p. 58). Stair et al. (2012) indicated “by identifying the concerns of pre-service teachers and early career teachers in the field, teacher educators can better determine appropriate course content and sequence coursework and in-service to better reflect the needs of these different groups” (p. 160). Therefore, teacher education faculty should consider concerns expressed by preservice teachers as they develop curriculum and practicum experiences. Miksza and Berg (2013) suggested providing preservice teacher candidates with additional assignments related directly to the predicted concern areas. Designing and selecting appropriate coursework to address preservice teachers’ concerns may increase their motivation, which can positively affect their learning (Stair et al., 2012).

Since many “teachers of agriculture graduate from teacher preparation programs claiming to lack the necessary technical skills to become successful teachers” (Garton & Chung, 1997, p. 57), it is important to address concerns and challenges prior to the student teaching experience (McCulloch et al., 2011). Teacher education faculty should also be able to anticipate the times when preservice teachers will encounter various concerns and be ready to provide guidance. Furthermore, if “beginning teachers’ initial beliefs and teaching practices play an important role in shaping, impeding, or facilitating what and how they learn in induction contexts” (Wang et al., 2008, p. 147), it is vital that mentors understand the phases through which beginning teachers progress.

Fuller (1969) questioned whether individuals go through the same concerns as groups of beginning or novice teachers and if these concerns are identifiable among others in the education discipline. Additional research is needed to determine whether Fuller's (1969) pattern also applies to preservice teachers in other disciplines.

Moir (1990/2011) emphasized the necessity of assisting new teachers as they transition into full-time professionals. Preservice teachers are no different. Assistance during this transition can help alleviate novice teachers' concerns as well as reduce their apprehension during the survival and disillusionment phases of teaching. A successful transition is crucial for novice teachers to develop positive attitudes toward teaching. Attitudes developed during the induction process are impacted by the attitudes developed during the student teaching experience (Rolheiser & Hundey, 1995).

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