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Preservice Agricultural Education Teachers' Perceptions of Teaching Assistants: Implications for Teacher Education

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Graduate assistants have an impact on undergraduate education through course instruction. For preservice agricultural education teachers, experiences with teaching assistants may be particularly influential, as their observations of educators could impact their perceptions and beliefs toward teaching. This qualitative study utilized data collected through individual interviews of six preservice agricultural education teachers at the University of Florida to explore preservice agricultural education teachers' perceptions regarding the quality of education received when instructed by a teaching assistant. We found that participants held mixed feelings about teaching assistants' impact on educational quality, and offered five areas of quality indicators participants used to gauge teaching assistant quality. The findings can be utilized to guide teacher educators in addressing students' experiences with teaching assistants in order to enhance their overall educational experience.

Keywords: teaching assistants, preservice teachers, teacher education

Over the last two decades, the trend in higher education has been to utilize more instructors who are not traditional tenure-track faculty members (Bettinger & Long, 2004). As faculty have increasingly been required to teach graduate courses and conduct more research (Shannon, Twale, & Moore, 1998), the responsibility of teaching undergraduate courses at larger universities has largely been laid upon graduate teaching assistants (TAs; Austin, 2002). Additional factors, such as rising costs and budget concerns have also caused an increase in the use of TAs (Bettinger & Long, 2004; Luft, Kurdziel, Roehrig, & Turner, 2004; Park, 2002). The National Center for Education Statistics (2009) reported that the number of TAs at public four-year institutions rose by 46% and at private four-year institutions by 73.4% between 1997 and 2007. Forty-six percent of TAs have taught at least one course, and 70% have had some degree of teaching responsibility (National Center for Educational Statistics, 2002). Additional TA responsibilities have included grading student work, holding office hours, and conducting labs (Nyquist, Abbott, Wolff, & Sprague, 1991). The combined increase in TAs and their responsibilities has given TAs considerable infl-uence over the quality of undergraduate educ-ation (Notarianni-Girard, 1999).

As a result of a lack of training (Shannon, Twale, & Moore, 1998), TAs have been traditionally associated with poor teaching quality (Costin, 1968). Additionally, Luft, Kurdziel, Roehrig, and Turner (2004) posited that many TAs "are expected to be experts in their discipline and knowledgeable of the appropriate pedagogical strategies for undergraduate instruction" (p. 212). For preservice agricultural education teachers, experiences with TAs may be particularly influential, as their observations of educators could impact their "dispositions toward teaching, learning, and subject matter" (Feiman-Nemser & Remillard, 1996, p. 65), understanding of teaching (Holt-Reynolds, 1992; Kagan, 1992), and future learning (National Research Council, 2000). In an effort to further

understand how aspects of teacher education programs impact preservice teachers, this study sought to describe preservice teachers' perceptions of their experiences with TAs that may have an influence on their future teaching practices.

Purpose

The purpose of this study was to describe preservice teachers' perceptions of the quality of education they have received when a TA instructs a course in hopes of gaining a better understanding of how perceptions of these experiences can be addressed in teacher education to positively impact future teaching practices. The purpose of this study was achieved through the following research question: How do preservice agricultural education teachers perceive the quality of education they receive from teaching assistants?

Subjectivity Statement

When conducting naturalistic inquiry, researchers should supply readers with a subjectivity statement in order to provide a lens through which to interpret the results (Merriam, 1998). The researchers who conducted this study are all assistant professors in agricultural education, former secondary agricultural educators, and have all served as TAs and instructors in undergraduate classrooms. Our beliefs are constructivist in nature in that we believe that students construct their knowledge through prior knowledge and experiences. We believe that optimal learning environments are student-centered and provide students with the opportunity to actively participate. These experiences and beliefs provided the basis for the theoretical lens of this study.

Theoretical Perspective

The theoretical perspective that guided this study was constructivism, which asserts that individuals construct their knowledge based on their experiences (Crotty, 1998). Crotty (1998) declared that "constructivism describes the individual human subject engaging with objects in the world and making sense of them" (p. 98). Constructivism supports the notion that multiple truths exist based on individual experiences with a phenomenon, so that individual experiences produce different meanings for each knower, and no experience can be truly duplicated to have identical truths for multiple individuals (Crotty, 1998). Therefore, according to Crotty, each individual becomes a *knower of truth* as each person interprets the world. In the context of this study, the preservice teachers have constructed knowledge pertaining to TAs and the act of teaching based upon their prior experiences and knowledge.

Theoretical Foundation/Literature Review

Bandura's (1986) social cognitive theory served as the theoretical foundation for this study. According to Bandura, human thought and behavior are influenced by direct and observational experiences and physiological factors. Additionally, social cognitive theory asserts that cognitive skills are socially constructed and that learning is a function of three interacting determinants: (a) behavior, (b) internal personal factors, and (c) environment (Bandura, 1986). Bandura's triadic reciprocality model (Figure 1) illustrates the bidirectional nature of the interacting determinants. However, according to Bandura, the interactions do not occur simultaneously and may be of unequal or varying strengths.

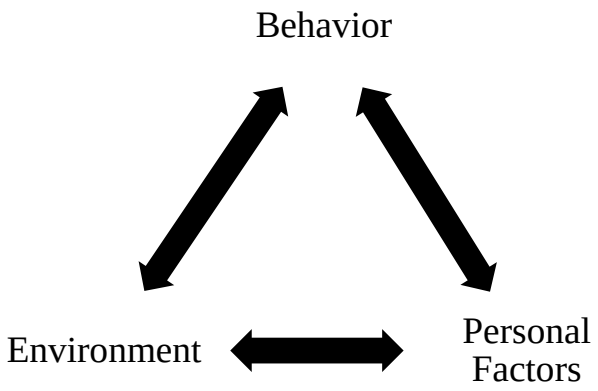

Figure 1. Triadic Reciprocality Model (Bandura, 1986, p. 24)

Bandura (1986) purported that personal factors such as "what people think, believe, and feel affect how they behave" (p. 25) and behavior influences thoughts and emotions. In addition, beliefs, thoughts, and emotions are influenced by the environment, and in return, personal factors, such as social status and physical characteristics, alter the environment (Bandura, 1986). Furthermore, behavior influences the environment and those conditions then affect behavior (Bandura, 1986). Operationalized for this study, behavior was defined as future teaching practices, external environment was defined as the teacher education program at the University of Florida, and the personal factor of interest in this study was preservice agricultural education teachers' perceptions of TAs.

Behavior – Future Teaching Practices

In the context of this study, future teaching practices are behaviors that are influenced by personal factors (perceptions of TAs) and the environment (teacher education program). As stated previously, Feiman-Nemser and Remillard (1996) reported that preservice teachers' attitudes about teaching, learning, and subject matter are impacted by observations of their teachers. Similarly, Holt-Reynolds (1992) and Kagan (1992) reported that observations of educators affect preservice teachers' understanding of teaching, and the National Research Council (2009) purported that one's teaching is influenced by the way one was taught.

Since the objective of teacher education programs is to prepare effective teachers, a consideration of what constitutes effective teaching must be considered. Research has identified several teacher characteristics related to effective teaching, including (a) clarity, (b) variability, (c) enthusiasm, (d) task/achievement oriented behavior, (e) providing students the opportunity to master learning objectives, (f) approachability and interaction, (g) organization, (h) setting high expectations, and (i) possessing knowledge of subject matter (Feldman, 1976; Reid & Johnstone, 1999; Rosenshine & Furst, 1971; Westwood, 2003). Furthermore, Chickering and Gamson (1987) offered the following seven research-based principles for undergraduate teaching and learning: (a) encourages contact between students and faculty, (b) develops reciprocity and cooperation among students, (c) encourages active learning, (d) gives prompt feedback, (e) emphasizes time on task, (f) communicates high expectations, and (g) respects diverse talents and ways of learning.

More specific to agricultural education, Roberts and Dyer (2004) put forward the following instructional characteristics of effective agricultural education teachers: (a) effectively plans for instruction; (b) effectively evaluates student achievement; (c) communicates well with others; (d) effectively recognizes achievements; (e) effectively motivates students; (f) has a love of agricultural subject

matter; (g) effectively manages student behavior; (h) encourages, counsels, and advises students; (i) effectively determines students' needs; (j) uses a variety of teaching techniques; (k) incorporates science and other areas of the school curriculum into the agriculture program; (l) has excellent knowledge of the subject matter; (m) is innovative, uses technology in the classroom, and adapts well to change; (n) is capable of solving problems and handling many different tasks at the same time; and (o) is knowledgeable of teaching and learning theory (p. 91-93). In line with social cognitive theory, preservice teachers' teaching behaviors should be influenced by their perceptions and the environment; therefore it is imperative that preservice teachers witness effective teaching.

Personal Factors – Perceptions of Teaching Assistants

As indicated previously, personal factors are influenced by behavior and the environment. In the context of this study, the personal factor of interest was preservice agricultural education teachers' perceptions of TAs. The literature specific to undergraduate students' perceptions of graduate TAs is limited. Nevill, Ware, and Smith (1978) investigated instructor ratings of postsecondary mathematics teachers, and the results indicated that undergraduate students rated TAs and faculty members similarly. Likewise, Schuckman (1990) found that in six out of seven semesters, psychology students rated graduate TAs the same as faculty, and in the remaining semester, graduate assistants were rated significantly higher than the faculty. Schuckman also examined instructor ratings in introductory psychology classes and found that graduate TAs were rated significantly higher in four out of seven semesters and were rated the same in the three remaining semesters. Furthermore, Tulane (2009) found that undergraduate students perceived graduate assistants to be effective in grading, maintaining confidentiality about student records, and mentoring. Tulane also reported that undergraduate students perceived their TAs to be knowledgeable in course maintenance, teaching responsibilities, and mentoring. Correspondingly, Park (2002) reported that undergraduates perceived TAs as approachable and understanding of "what it is like to be an undergraduate in terms of knowledge, handling conceptual difficulties, familiarity with discourse, ways of approaching study, recognition of difficulties, coping with life as a student, and so on" (p. 53).

On the other hand, Brandenburg, Slinde, and Batista (1977), Centra and Creech (1976) and Marsh and Dunkin (1992) all found professors to be rated more highly than TAs by students. In addition, Park (2002) stated the undergraduates were concerned about access to someone with in-depth subject knowledge and teaching experiences.

Environment – Teacher Education Program

In social cognitive theory, an individual's environment is influenced by personal factors and behavior (Bandura, 1986). More specifically, the environment was operationalized as the agricultural teacher education program at the University of Florida and is influenced by preservice agricultural education teachers' perceptions of TAs and their teaching practices. Cruickshank (1984) posited that there are five explanatory variables in teacher education: (a) teacher educators, (b) preservice teachers, (c) context of teacher education, (d) content or curriculum, and (e) instruction and organization for instruction. Regarding teacher education preparation, various perspectives exist on how programs should be designed (Roberts & Kitchel, 2010). Cruickshank et al. (1996) professed that teacher education could be divided into three or four components: (a) general education, (b) technical education, and (c) pedagogy (educational knowledge and educational skills). Darling-Hammond and Bransford (2005) developed a conceptual framework that condensed the effective teaching and learning literature into (a) "knowledge of learners and their development in social context" (p. 11), (b) "knowledge of subject matter and curriculum goals" (p. 11), and (c) "knowledge of teaching" (p. 11). Darling-Hammond and Bransford purported that the three previously mentioned categories of knowledge are important when preparing teachers. Similarly, Roberts and Kitchel (2010) synthesized the teacher education literature into "four dimensions:

(a) general knowledge, (b) subject matter (technical content) knowledge, (c) pedagogical knowledge, and (d) pedagogical content knowledge" (p. 103).

Methods

Description of Participants

The participants for this study were purposively selected undergraduate agricultural education students from the University of Florida during the Fall 2010 semester. The criteria for students to take part in this study were that they must be a preservice agricultural education teacher, have completed 90 or more credit hours, and have previous experience with graduate TAs as instructors in any of their courses. We concluded that students having 90 or more credit hours should have a broader experience with TAs, thus creating a sample rich with relevant information (Flick, 2006). After approval from the Institutional Review Board was obtained, an invitation email was sent to potential participants and six students were selected to participate in the study based on their eligibility from the above criteria and their willingness to participate in an interview. When using a constructivist lens, the prior knowledge and experiences of the participants are vitally important to how they make sense of the world (Crotty, 1998); therefore a description of the participants is appropriate. The participants were all given pseudonyms to protect their identities. The pseudonyms which were used in the findings included Marge, Isabella, Jenna, Helen, Sally, and Nicole. All six of the participants were females enrolled in the preservice agricultural teacher education program at the University of Florida, and were in their final year of the teacher education program. While the selection of only female participants was not intentional, the high female to male ratio in the preservice teacher education program within the Department of Agricultural Education and Communication at the University of Florida led to this gender-biased selection. Participants ranged in age from 20 to 23. The participants varied in their experience with TAs, and their experience ranged from five classes to 11 classes taught by TAs. No effort was made to distinguish between when and in what classes TA experiences were had, as the participants came from varying educational backgrounds. The majority of the participants transferred to the University of Florida from various state community colleges, while one participant transferred from an out-of-state, private, four-year university. The university system within Florida is set up in a manner in which transferring from a community college following the sophomore year is very common. While the sample does not allow generalization of the findings to broader populations, the purpose of this study was not to generalize, but rather to understand student experiences based on the context in which they occurred.

Data Collection and Analysis

Data were collected through individual interviews, which was deemed appropriate given the constructivist nature of the study. Because knowledge is constructed through the experiences of the individual, truth can be discovered through an analysis of the individual's account, acquired through individual interviews (Flick, 2006). A semi-structured interview guide was established, which allowed flexibility for us to ask probing questions in search of a richer, deeper discourse (Flick, 2006). Each interview session lasted approximately 45 to 60 minutes. To establish trustworthiness, we audio-recorded interviews and transcribed them verbatim into Microsoft Word.. Once the transcriptions were complete, we listened to the recordings a second time to verify their accuracy (Merriam, 1998). Additionally, member checks were completed by the participants in order to increase credibility, while to ensure dependability of the study, audit trails were created (Dooley, 2007). While we conducted interviews and analyzed transcriptions separately, we collectively combined each separate analysis to result in the final findings, thereby including a method of researcher triangulation in the data analysis (Dooley, 2007).

The data were analyzed using domain analysis, which is a type of thematic analysis that seeks to discover and organize parts or elements of cultural meaning (Spradley, 1979).

Spradley identified these elements of cultural meaning as domains and indicated that each domain consists of relationships between included terms (data provided by the participants) and cover terms (created by the researcher). Domain analysis is accomplished by reading the transcript and searching for included terms of interest. Once included terms have been identified, they are grouped with related included terms and subsequently given a cover term which describes and identifies each group. We followed this protocol, and individually read the transcribed interviews once for understanding and then reread the interviews in order to isolate specific included terms. Next, we each identified and grouped the related included terms and then created cover terms to describe the groups of included terms. Once cover terms were assigned, we convened to compare our analyses. We discussed the analyses and reached consensus about appropriate cover terms to include in the findings.

Findings

Analysis of the data led to the domain of TA quality indicators, as shown in Figure 2. Participants reported mixed perceptions of TA quality; however, their perceptions were influenced by five quality indicators. Quality indicators included TA initial credibility, instructional variety, comfort in the classroom, consistency, and relationships with students.

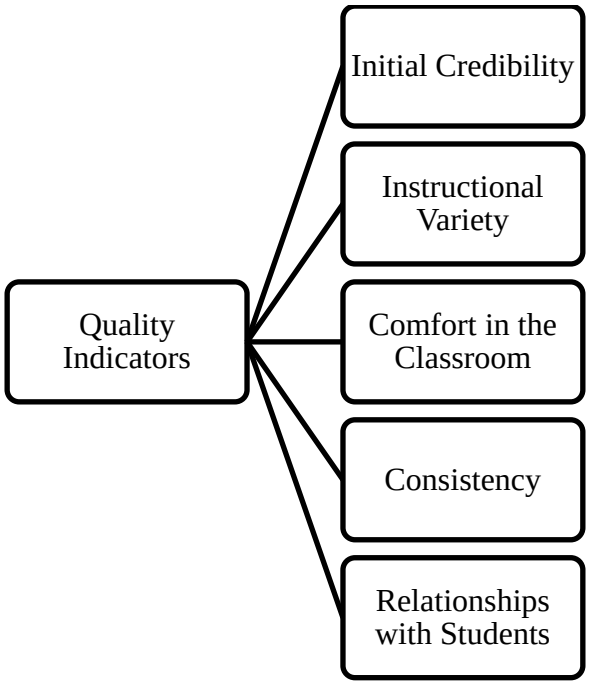

Figure 2. Preservice teachers' indicators of TA quality.

Mixed Feelings of TA Quality

Several of the students expressed mixed feelings when explaining their perceptions of having TAs as instructors. Most of the participants initially expressed negative perceptions with regard to TAs, but later contradicted their previous statements. Helen used statements like, "Not again," "I had a really bad experience," "I'm slightly against it," and then more strongly, "I don't like it," initially when asked about her first thoughts regarding TAs teaching classes. Other participants admitted they were first "scared", "cautious", "negative", and had "nervousness". However, later statements indicated that they also had positive perceptions regarding TAs, as noted by Helen:

> I know that my TAs have the experience, they have the knowledge, and they know what they're doing. When my professors are probably a little above, like in terms of their research and such, so in a way it works out better, because I know I'm getting an experienced person and I'm not having to worry about a professor who's submitted 300 articles into a journal, trying to teach a theory that I may not be able to get.

Jenna and Isabella also indicated that their perceptions became more positive over time, stating that they became "more open minded" and "try not to get too scared about things". Marge's statements followed a similar theme, first expressing "frustration" when working with TAs, and then becoming more positive, even indicating that she felt TAs and professors offer similar educational experiences. However, she justified reasoning for her positive statements:

> That would depend on your TA. Starting off, I am personally, I am very I guess negative to the fact? When it's a TA. But then if they do a good job, then I'm more understanding and I'm just like, you know, I'm ok with this. It's not as bad as I thought it was going to be…TAs aren't bad. I just feel like, depending on the situation. Some experiences are really good, and some are not so great.

These mixed feelings stemmed from the specific attributes of "good teaching" that students value; their statements indicated that when TAs possess these characteristics, the students had positive experiences with their TAs. However, their initial negative attitude regarding TAs only altered after further discussion that led to specific instances and details of TA attributes. These mixed feelings were the result of student perceptions of quality indicators, as their views of TAs turned more positive with regard to situations in which TAs displayed these characteristics and negative feelings were expressed in relation to situations that lacked these characteristics. The quality indicators discussed by the participants were initial credibility, comfort in the classroom, instructional variety, consistency, and relationships with students.

Initial Credibility

Included terms found in participant statements revealed the impact of a TA's initial credibility on their perceptions of TA quality. While each of the participants identified different methods for establishing credibility, several indicated that they felt more positive about having TAs when they felt the TA was credible at the beginning of the course. Helen based this initial credibility off of her impressions of the TA during the first class and off of her knowledge of the TA's background. She related greater TA credibility with those who "know what [they are] doing", "if they start acting like in [her] opinion how a professor is supposed to act", and know "how to teach". However, she based her impressions on these items because she claimed she had nothing else to go by:

> Because I don't know the TAs experiences, I don't know their prior background, I don't know anything about these TAs. They don't list, oh, I was a…you know, and undergraduate student in this, this and that. They don't come with a…they don't come with credentials. They just show up that first day and they start teaching and it's, well, what makes you qualified? Whereas with a professor, they at least had to have, you know, I assume Master's degree, they had to have some research, they had to have some reason for being hired.

Marge, Sally, and Isabella based TAs' initial credibility solely on the presence (or lack thereof) of a Ph.D. Their comparisons between TAs and professors hinged on the difference in degree, as noted by Isabella: "I didn't understand how someone else was qualified to teach a college level course because they weren't a professor". Sally felt that a TA's lack of credibility as a "qualified professor" may impact her grade in a course led by a TA.

Comfort in the Classroom

Participants noted that their perceptions of the quality of education when working with TAs relied on the TA's level and display of comfort in the classroom. During positive TA experiences, Helen noted that the TAs "knew their stuff", were "confident in front of a classroom", "seem[ed] better prepared", "[knew] what they're doing", and were "creative". Isabella stated that effective TAs "have been teaching, you know they have experience, and so they really do know what they're talking about." Marge repeatedly used the word "comfortable" to describe how "good" TAs act in the classroom. Sally noted that comfortable TAs "know what they're teaching and they're not just kind of standing up there looking like a fool". Negative experiences were indicated when the TAs "look like they've been thrown in", are "jittery", "disorganized", "don't seem ready to be teaching", and were "frozen and paralyzed". Isabella related experiences with uncomfortable TAs to her own teaching beliefs, stating that "it kind of felt like they were just being thrown into a teaching situation…and you know obviously being in a teaching program, I think that's entirely wrong." These behaviors were assumed to be from nervousness in the classroom and around the students by several of the participants.

Instructional Variety

Participants identified that quality TAs were able to intentionally vary instruction to benefit the students. Helen appreciated instructional variety, stating that "students learn in different ways", and "good" TAs "mix things up" and "find alternative ways to explain" to "vary things according to how people learn". Sally compared the instructional variety she has experienced with TAs as being more dynamic than that of professors, who "sometimes…get caught up in just teaching from the slides". Nicole also linked her TA experiences to her pedagogical knowledge, stating that,

> Not every person has the same teaching style and so maybe when the TA is teaching a lesson or during a lab they might design lessons that are more, like, designed toward your learning style than the professor…so it, like, helps with the different personalities and learning styles in the classroom.

Marge expressed the consequences she has experienced when TAs do not intentionally vary their instruction:

> They're just like giving you all this information. They're like, presenting you the information, not really teaching you the information. So they may just give you, like a whole bunch of notes, and it's not like they go into detail? They just give them to you and then they're like, ok, well our test will be blah blah blah. And you're like, ok… That's great. What do I do with it now?

Consistency

Consistency was also identified as a quality indicator. Several participants were concerned primarily with lack of consistency in grading. Helen equated inconsistent grading with "disorganization and chaos". Marge expressed similar feelings when she stated that not having a "set standard for grading" was "kind of unfair". Sally noted that she was more willing to "be a guinea pig" for TAs who tried out different teaching methods as long as the TA was "somewhat consistent in their grading". However, underlying the concern of earning good grades was a deeper cause for uncertainty. Participants were not appreciative of not knowing what to expect, as they were with regard to intentional variation of instruction. Marge repeatedly stated that inconsistency in classes led her to feel that she "didn't know what they're gonna do".

Relationships with Students

The relationship between TAs and students was important to several participants, who preferred TAs who are caring and can build rapport with students. Isabella said "a good TA is someone who you feel like you can always call and ask for help if you need something like, so they're accessible." Jenna said she enjoys TAs who "understand" and who "care," it makes her "comfortable" and she "look[s] forward to going to class." Nicole mentioned that she had more positive experiences with TAs she built

more of a relationship with. Jenna, Nicole, Sally, and Isabella favored TAs who are approachable, accessible, and willing to help. "Someone who…makes me feel comfortable like and accessible is the biggest thing for me" was how Isabella described an approachable, accessible, and effective TA. Sally stated that certain TAs are "more approachable", and "more willing to help you through certain assignments and stuff like that". Nicole noted that at times, she preferred TAs because she felt she "can go to them with questions [she] might be too scared to ask the actual professor". These positive attributes of relationship lead to connectedness between students and TAs. In describing her connectedness with one TA, Isabella said,

> Ever since then…we've kept up and I go to talk to her because my class is right beside her office…we're kind of friends now and it's cool because I can still talk to her about educational stuff and like stuff I am going through.

Both Isabella and Jenna also related this quality indicator in TAs as one that connects with their beliefs in teaching. Isabella stated, "as a teacher I want to be more than just an educator, I want to actually be like a mentor, and a good, you know somebody they can actually come and talk to if they need life advice." When describing how her TA could help with her future teaching Jenna said, "people like her open doors for people like me…now that I'm in classroom reading and have to teach reading skills…I'm comfortable." TAs who modeled behavior consistent with Jenna and Isabella's teaching goals helped them prepare for their teaching careers.

Conclusions, Implications and Recommendations

The results of this study revealed findings leading to several implications applicable to practices in agricultural teacher education. First, based on previous bad experiences, the preservice agricultural education teachers in this study seemed hesitant about having TAs as instructors in their courses. However, the preservice teachers indicated that if a TA exhibited certain characteristics of quality teaching, this would help them change their perceptions about that TA. This finding confirms that preservice teachers possess an understanding of what comprises quality teaching and that their perceptions of TAs are shaped by this understanding of quality teaching. The change in perception also aligns with Bandura's (1986) triadic reciprocality model, as preservice teachers' perceptions of quality teaching were shaped by environmental factors, such as pedagogical instruction. According to Bandura's social cognitive theory, preservice teachers' perceptions of TA quality may impact their future teaching practices. Understanding preservice teachers' perceptions is critical, as research has shown that observations of educators influence attitudes toward (Feiman-Nemser & Remillard, 1996) and understanding of teaching (Holt-Reynolds, 1992; Kagan, 1992), in addition to future learning (National Research Council, 2000).

In regard to the first TA quality indicator, initial credibility, the preservice teachers had more positive reactions toward TAs when they felt the TA was credible at the beginning of the course. The preservice teachers based TA credibility on initial impressions of the first class, prior knowledge of the TA, and the lack of a doctoral degree. Theoretically, initial credibility and perceptions of TAs, which are represented as environmental and personal factors, respectively in Bandura's (1986) triadic reciprocality model, can influence preservice teachers' teaching practices. Therefore, we recommend that TAs prepare an introduction on the first day of class that highlights their prior experiences in the subject matter to be taught and their qualifications to teach the course. This may aid TAs in establishing credibility, thus leading to positive perceptions among their students at the beginning of a course.

The second TA quality indicator that was identified in this study was instructional variety. The preservice teachers professed that TAs who were able to vary instruction were better teachers than TAs who did not vary instruction, which is congruent with research on effective teaching (Roberts & Dyer, 2004; Rosenshine & Furst, 1976; Westwood, 2003). Furthermore, the identification of instructional variety suggests that the preservice teachers in this study recognize effective teaching characteristics.

Social cognitive theory (Bandura, 1986) would suggest that this knowledge of effective teaching (a personal factor) can positively impact the future teaching practices of preservice teachers.

The third TA quality indicator that was identified in this study was comfort in the classroom. Preservice teachers perceived that TAs had differing levels of comfort in the classroom and preferred TAs who displayed more comfort. Comfort level of the TA in the classroom is an environmental factor, which according to social cognitive theory (Bandura, 1986), influences behavior and personal factors. Therefore, comfort level of the TA should influence preservice teachers' teaching behaviors and their attitudes and beliefs toward teaching and learning. Consistent with theory, research has shown a link between educators' instructional practices and their students' attitudes and understanding of teaching and learning (Feiman-Nemser & Remillard, 1996; Holt-Reynolds, 1992).

The fourth TA quality indicator that was identified in this study was TA consistency. The preservice teachers mostly expressed concerns related to consistency in grading, which is not congruent with Tulane (2009). However, preservice teachers also indicated that the consistency of instructional quality can be affected when a TA teaches a course. TA consistency is an environmental factor that theoretically impacts preservice teachers' teaching practices and beliefs. This implication may be troubling to teacher educators, as consistency might affect the quality of preservice teacher education their students receive. The National Research Council (2009) stated that one's teaching is influenced by the way one was taught and that educational practices shape what is learned. Therefore, inconsistency among TAs' instruction may have negative consequences on preservice teachers' learning, teaching practices, and pedagogical beliefs. Future research should seek to determine the extent to which TA inconsistency negatively effects preservice teacher education.

The last TA quality indicator identified in this study was relationships with students. The preservice teachers reported numerous positive relationships with TAs and stated that their positive relationships helped them prepare for careers in teaching. These results are similar to those found by Park (2002), who reported that undergraduates perceived TAs to be approachable and understanding. TA training opportunities should include discussion regarding the importance of TAs' relationships with students, as well as methods for establishing and maintaining positive TA-student relationships.

Based on the results of this study, there are several recommendations for teacher education programs. First, teacher educators should ensure that preservice teachers have a thorough understanding of what high quality teaching entails, along with an understanding that some of their TAs may not exhibit quality teaching behaviors. This will hopefully prepare preservice teachers for the experiences they will face as students. Next, teacher educators can help guide preservice teachers in reflective practices to evaluate their educational experiences with TAs. These reflections could help limit the impact of negative TA experiences, and help preservice teachers pinpoint teaching behaviors they may or may not want to utilize in their future classrooms. Additionally, teacher educators may be in the position to provide training to TAs in order to improve their instruction, consistency, comfort in the classroom, and relationships with students. TA professional training might take the form of teaching symposia, training sessions, teaching training centers, online training, or various other forms.

Future research should further examine the dynamics between TAs and preservice agricultural education teachers and seek to determine the effect TA experiences have on preservice teachers' instructional practices and their knowledge of teaching and learning principles. Research should also seek to determine the extent to which the TA quality indicators identified individually affect preservice teachers' teaching practices. Additional inquiries should be conducted to determine if other quality indicators exist and the effect these quality indicators have on preservice teachers, as well as strategies for reducing the impact of negative TA experiences on preservice teachers. Finally, future research can answer questions left open by the limitations

of this study. For example, studies including male participants can assist in determining whether findings in this study were gender-specific. Specific aspects of TA experiences, such as those from community colleges, those from non-transfer students, those specifically within the teacher education courses, and those from technical agriculture courses can provide greater clarity in the factors impacting preservice teachers' perceptions of TAs.

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