

# Defining Agricultural Education Instructional Quality

Charles Cordell Jenkins, III, Agricultural Education Instructor

*Rolla Technical Institute, Missouri*

Tracy Kitchel, Associate Professor

*University of Missouri*

Bryan Hains, Assistant Professor

*University of Kentucky*

*Current legislation, theory and concepts build the framework for this study in understanding how quality instruction is defined in education in general. In particular, the Fenstermacher and Richardson (2005) definitions of good, quality and successful teaching were used as the lens to interpret the findings. The study takes an exploratory approach at answering “what are specific indicators of quality instruction in a school based agricultural education program?” by using the consensus–building Delphi technique. The study found that experts in the field of agricultural education agreed upon 37 quality indicators. These indicators fell within a range of teaching aspects as defined by Fenstermacher and Richardson. Approximately 50 items from the open–ended round of the Delphi did not reach consensus among the expert panel.*

Keywords: quality indicators, instruction, agricultural education

## Introduction and Theoretical Framework

How does one define quality instruction? This question sparks several debates amongst practitioners, researchers, and policy makers in education. The definition utilized by each sect is often fluid, yet each initiate strategies to assess the topic. In 2006, Secretary of Education Margaret Spellings established a priority ensuring America’s teachers are of the highest quality, and advocated that good teaching begins by providing students with highly qualified teachers. Spellings’ initiative is supported by the *No Child Left Behind Act of 2001* (NCLB) (United States Department of Education, 2001). Under this legislation, highly qualified teachers must hold a bachelor’s degree, have full state certification, and demonstrate competency in the core academic subjects they teach (Spellings, 2006).

In order to guarantee teachers are highly trained, the United States Department of Education implemented both the *NCLB* and *Higher Education Act Title II* (HEA) (Spellings, 2006). Their purpose was to provide accountability measures for both K–12 and

higher education institutions within each state. Additionally, they specify standards associated with pre–service teacher training. “Teacher standards define what teachers are expected to know and be able to do before they enter the classroom” (Spellings, 2006, p.2). The recent rise in participation among academic institutions within the National Council for Accreditation of Teacher Education (NCATE) highlights the collegiate movement towards meeting this expectation (National Council for Accreditation of Teacher Education, 2008).

Within agricultural education, pre–service teachers are immersed in a collegiate setting which focuses on both pedagogical and agricultural content knowledge. In an effort to instill quality teaching practice, students are indoctrinated with various forms of teacher performance criteria as evidenced by varying teacher certification requirements from state to state. Traditionally, teacher educators expose students to effective teaching behaviors developed by Rosenshine and Furst (1971); a mainstay in agricultural education. However, other frameworks have been developed within agricultural education. Miller, Kahler and

Rheault (1989) documented 31 characteristics of teacher effectiveness within the categories of productive teaching behaviors; organized, structures class management; positive personal relationships; professional responsibilities; and personal characteristics. In a later study, Roberts and Dyer (2004) established 40 characteristics of effective agricultural teachers. Characteristics were identified within the categories of instruction, FFA, SAE, building community partnerships, marketing, professional growth, program planning and personal qualities. Both studies provide valuable insight into effective teaching behavior within agricultural education; generally aligning with the National Standards for Teacher Education in Agriculture (American Association for Agricultural Education, 2001). However, there's no indication that their application in pre-service curriculum and teacher practice is being implemented on a unified national level.

After students complete their academic training they are tested for their pedagogical knowledge and agricultural content mastery. This is often accomplished through state or national licensure exams such as the Praxis I (pre-service teacher exam used for advancement in a teacher education program) and Praxis II (exam used for licensure in many states) from the Educational Testing Service. Goldrick (2002) believed that while evaluating pre-service teacher content knowledge and pedagogical understanding is a positive step in providing competent teachers, licensure measurements may not equate to quality instruction. He asserted that teacher evaluation is different from teacher licensure, which focuses on minimum competencies. This transition from student to professional is often overlooked and rarely results in the, "termination of truly poor educators" (Goldrick, 2002, p.3).

The Center for the Future of Teaching and Learning (2007) supported Goldrick's assertion. Researchers found that principals in California report hiring teachers based on their initial credentials with little attention given to the candidates teaching ability. "Although all new teachers are assessed on the quality of their teaching, few are asked to demonstrate their ability to teach before they are hired" (The Center for the Future of Teaching and Learning, 2007, p.3).

Educational researchers Fenstermacher and Richardson (2005) provided additional insight on instructional quality; arguing that current evaluation techniques are based upon a naïve perception of the relationship between teaching and learning. They claim most educators use the term "teaching" in its task sense, meaning learning occurs based on the instructional intent. However, this does not translate to practice. Fenstermacher and Richardson (2005) challenged teachers by asking the question, "At what point is it no longer acceptable to say we are teaching when no learning follows from our efforts?" (p. 188).

It was this question that prompted Fenstermacher and Richardson (2005) to define three aspects of teaching; *successful teaching*, *good teaching*, and *quality teaching*. Successful teaching indicates that the learner obtains, to an acceptable level of proficiency, what the teacher is trying to relay (Fenstermacher & Richardson, 2005). In contrast, good teaching aligns classroom content and academic standards in addition to providing teaching methods which are age appropriate, morally defensible, and enhance the learner's competence in the subject matter (Fenstermacher & Richardson, 2005). Finally, they concluded that quality teaching is more holistic in nature, consisting of a willingness and effort by the learner, a social environment supportive of teaching and learning, opportunities to teach and learn, and good teaching as previously defined (Fenstermacher & Richardson, 2005). Under this interpretation, the accountability of quality teaching is placed on both the teacher and the learner.

Several studies have explored characteristics of effective agriculture teachers. However, when placed upon the suggested framework, characteristics of an effective teacher may only be equated as "good teaching" (Fenstermacher & Richardson, 2005). Thus, such an approach limits the scope of responses. The application of Fenstermacher and Richardson's (2005) framework toward agricultural education challenges inquiry regarding characteristics of an effective teacher versus indicators of quality instruction.

### Purpose and Methods

The purpose and objective of this study was to determine quality indicators for instruction according to agricultural education experts (agricultural education teacher educators, state instructional staff, and high school teachers) across the United States. This study was a component of a larger study which also investigated FFA and SAE quality; therefore, the methods outlined for this study will match the methods outlined for the FFA and SAE study (Jenkins & Kitchel, 2009). This national study was exploratory in nature and utilized the Delphi technique, which is used as a method of structuring group communication (Linstone & Turoff, 1975). The Delphi technique is useful in professional education for gaining knowledge not often verbalized (Stewart, 2001).

The study utilized an expert panel ( $n = 36$ ) of agricultural educators in different career phases of the profession. The panel consisted of 12 teacher educators, 12 members of state instructional staff, and 12 high school agriculture teachers all representing the six National Association of Agricultural Educators' (NAAE) regions. The researchers purposely selected experts at varying places in Agricultural Education teacher preparation and advancement. To ensure an equal national representation, the six NAAE regions were utilized because of their variability – there were six regions to garner representation versus four regions outlined by FFA. Leadership within in the profession was a key criterion in ensuring the panelists had a national scope in responding to the questions. The criterion for high school teacher selection was that the teacher must have been a NAAE outstanding young member, outstanding teacher, or outstanding middle/secondary program award recipient from the past three years or NAAE board member from the past three years. The criterion for teacher educators and state instructional staff was a minimum of three years of leadership experience. For this study, leadership experience was defined as current or past membership on the Council, National Association of Supervisors of Agricultural Education (NASAE) executive committee, American Association for Agricultural Education (AAAE) board of directors, National FFA Board of Directors. For teacher educators, tenure was an additional requirement as tenure is

typically based on having some type of recognized expertise in the field. Selection was also based on proportion of gender in each of the categories to take into account what has traditionally been a male-dominated profession.

This study utilized the Delphi Conference form (Linstone & Turoff, 1975). The researcher verbally invited the experts to participate in this study via the telephone. Following the phone invitation, experts received a letter thanking them for participating and summarizing the phone invitation. A pre-notice email was sent three days prior to each questionnaire reminding the participants about the upcoming round. Panel members received an email from the researcher containing a hyperlink to access the questionnaire for each round. The initial questionnaire was developed by the researcher and was constructed in web format. Both face and content validity were established by a panel of experts of Agricultural Education and related faculty from two universities. Inter-rater reliability was addressed in developing the items from Round One to Round Two. Two raters themed the items and a 36% agreement between coders was calculated. When conferring on the items, the coders determined that one coder was grouping items more broadly than the other. The two raters then conferred on the grouping to create the final list of items used in Round Two and subsequent rounds. In addition, to assist with reliability, the raters also developed topic areas to also assist with clarity of item interpretation from expert to expert.

Three open-ended questions were developed for Round One and were stated as “what are specific indicators of quality [instruction, SAE or FFA] in a school based Agricultural Education program?” This study utilized the *Instruction* version of the question. The responses from Round One were categorized using a modified version of the open-ended question coding technique developed by Montgomery and Crittenden (1977). The modification was that topic areas were created after the items were selected because of the lack of consistent literature to define specific topic areas. After the responses to Round One ( $n = 31$ ; 86.11% response rate) were categorized, the Round Two questionnaire was developed and distributed. The Round Two questionnaire asked participants “to what extent do you agree that the item is an indicator of quality

instruction?”, using a five point Likert-type scale: 1 = Strongly Disagree, 2 = Disagree, 3 = Uncertain, 4 = Agree, and 5 = Strongly Agree. Round Two had a response rate of 86.11%.

Items from Round Two that received a score of “4” (Agree) or “5” (Strongly Agree) by 100% of the respondents were considered to have reached consensus and were identified as quality indicators. This study used frequencies and percentages, which differs from other studies in agricultural education which use means and a mean score cut-off for acceptance of an item. Researchers chose this route to ensure that all panelists agreed at some level (a “4” or “5”) that an item should be included as a quality indicator. This ensures true consensus of the entire group. With a mean cut-off score, one could have a high mean score, yet have one or more panelists mark a “3” or below, which does not indicate agreement of an item to be included as, in this case, a quality indicator. Thus, this use of the method is a more stringent approach to item selection.

For Round Two, if less than 75% of the respondents scored an item as a “4” or “5,” that item was rejected as indicator and was therefore removed from the study. Literature is unclear on a proper cut-off for consensus. The researchers concluded the likelihood of agreement being reached with 25% or more being neutral or disagreeing would be slim. Therefore, items that did not reach consensus (consensus being 100% marking “4” or “5”), yet had not been removed (removal being less than 75% marking “4” or “5”) were moved into Round Three. Round Three had a response rate of 83.33% and sought to determine consensus. Round Three had participants indicate either agree or disagree for each item. The Round Three questionnaire was developed and included the individual’s score, the group’s mean score, and the standard deviation for each item. Participants were

merely asked if they agreed or disagreed that an item should be a quality indicator. Round Three used similar benchmarks for consensus. If 100% of the respondents marked “agree”, it was included as a quality indicator. If 75% or less agreed an item should be included as a quality indicator, that item was dismissed as a possible quality indicator and removed from the study.

Round Four had a response rate of 85.71% and sought to determine if semantics contributed to disagreement on Round Three statements. Only participants who disagreed with the inclusion of an item from Round Three participated in Round Four. Participants were asked if changing the wording of the item would change their agreement on inclusion as a quality indicator. If they agreed that they would include the indicator if a change were made, they were then prompted to explain how the indicator would need to be changed.

**Findings**

Quality instruction statements were developed for the Round Two questionnaire. As illustrated in Table 1, Round Two resulted in 19 of the 87 quality instruction statements reaching consensus as defined by 100% of respondents marking either a “4” (Agree) or a “5” (Strongly Agree). In addition, 14 of the 87 quality instruction statements were determined not to be quality indicators of instruction and removed from the study, as defined by less than 75% of the respondents marking either a “4” (Agree) or a “5” (Strongly Agree). The group was undecided on the remaining 54 quality instruction statements, meaning 99.9% to 75% of the respondents marked either a “4” (Agree) or a “5” (Strongly Agree). Therefore, those statements were included on the Round Three questionnaire.

Table 1  
*Agreement Levels for Instruction Items in Round Two*

Item Reviewed by the Expert Panel	Percent Agree (4 or 5)
Items Meeting Consensus and Considered Quality Indicators	
1. Assessment is authentic	100.0
2. Assessment is based on the instructional objectives	100.0
3. Students receive timely feedback on their performance	100.0
4. A qualified/ certified agricultural instructor	100.0

5. The teacher is involved in professional development	100.0
6. The teacher is organized and prepared	100.0
7. The teacher has a well planned teaching calendar	100.0
8. The program has community and parent/ volunteer support	100.0
9. Classroom management practices maximize time on task and minimize disruptive behaviors	100.0
10. Evidence of use of a variety of instructional strategies/ materials	100.0
11. The teacher actively engages students	100.0
12. Appropriate technology is used with instruction	100.0
13. A mix of classroom and laboratory instruction is used	100.0
14. An adequate budget is provided	100.0
15. The curriculum is up-to-date	100.0
16. The curriculum is planned in advance	100.0
17. Lesson plans are based on appropriate instructional objectives	100.0
18. Instruction is supported by appropriate resources (financial, personnel, and community)	100.0
19. Instruction includes technical skills	100.0
Items Not Reaching Consensus as a Quality Indicators, but Moving to Round 3	
1. Assessment is holding students accountable and making them strive to reach a higher standard	96.8
2. The teacher has a passion for teaching and working with youth	96.8
3. A teacher who is dedicated	96.8
4. There is a balance between other components (SAE and FFA)	96.8
5. The teacher emphasizes safety	96.8
6. There is instruction that is hands on learning	96.8
7. Instruction occurs in appropriate facilities	96.8
8. The curriculum integrates academic content with agriculture content	96.8
9. Instructional materials including textbooks, workbooks, visuals, etc. are up to date	96.8
10. The curriculum serves multiple purposes (career preparation, college preparation, etc.)	96.8
11. Instruction provides students with communication skills	96.8
12. Instruction provides students with the ability to function as a member of a team	96.8
13. Teacher has adequate time to plan instructional activities	96.7
14. The program has a supportive administration	96.7
15. An advisory committee is in use	96.7
16. There is a defined mission, goals, and vision for the program	96.7
17. The instructional program uses community-based resources	96.7
18. The local program/curriculum is in compliance with all local and state requirements	96.7
19. The instructor has a healthy relationship with others	93.6
20. The program has a supportive faculty	93.6
21. There is an active industry advisory committee that meets at least twice per year to review curriculum, program priorities, and program management	93.6
22. Student work is recorded	93.5
23. Students have access to a course syllabus/guide/curriculum	93.5
24. Student progress toward attainment of competencies is well documented	93.5
25. Teaching is geared toward the learning style and capabilities of the students	93.5
26. Enrollment in classes is appropriate (not too large or too small)	93.5
27. There is instruction in personal development	93.5
28. Instruction incorporates leadership development	93.5
29. Instruction helps to build multiple relationships (e.g. with school, community, and adults)	93.5
30. The curriculum meets the needs of students	93.4
31. Instruction is student-centered	91.7

32. The instructional program is articulated with post–secondary programs	90.4
33. The curriculum is relevant to the local community	90.4
34. The program includes opportunities for including Supervised Agricultural Experiences for all students in all courses	90.3
35. The teacher is a member of professional organizations	90.3
36. A teacher who is personable	90.3
37. School administrators are satisfied with instruction	90.3
38. Teacher performance is assessed at an acceptable level by administration or peers	90.3
39. Reference materials are maintained on file in the department	90.3
40. A teacher who has been recognized for quality teaching	87.1
41. The teacher uses a lesson plan	87.1
42. The advisory committee is satisfied with instruction	87.1
43. The curriculum is contextual	87.1
44. Instruction includes career development, exploration, awareness and preparation	87.1
45. Student performance/mastery of topics taught	83.9
46. All agricultural education students maintain an SAE	83.9
47. Students are satisfied with instruction	83.9
48. A rigorous curriculum is in use	83.3
49. The curriculum applies to complex situations	80.7
50. There is an alumni association or other support group	80.6
51. Instruction is competency based	77.5
52. The teacher has an archive of lesson plans	77.4
53. Out of class instructional activities (such as homework, projects, meetings, etc.) are required	77.4
54. Students take notes (have notebooks)	77.4
Items Removed from the Study	
1. The teacher is pursuing or has advanced degrees	74.2
2. All agricultural education students have individual career plans	71.0
3. A system for conducting graduate follow up activities for students who are program completers	71.0
4. Enrollment policies allow easy entry and easy exit from the agriculture program (enroll one semester/ year, but not the next or vice versa)	71.0
5. The curriculum is industry (skill sets) driven	71.0
6. Student composition in classes is representative of the school’s student body	71.0
7. The program is in process of development of program of study for agriculture, food, and natural resources that spans 9–14 grade levels	67.7
8. A comprehensive plan that includes completion standards is in use	67.7
9. Student enrolled in agricultural education classes are required to be FFA members	63.3
10. Success is based on the number of concentrators or completers of the agriculture program	45.2
11. There is a web site for the agriculture program	45.1
12. Instructional success is based on the number of high achieving students in the program	42.0
13. Success is based on the number of students enrolled in the programs	35.5
14. Instructional success is based on the percentage of students pursuing agriculture careers or college degrees	35.5

Note. 100% Agreement (marked 4 or 5) = Consensus, >75% Agreement = Undecided, <75% Agreement = Reject

As illustrated in Table 2, 18 of the 54 instruction statements in Round Three reached consensus. The remaining 37 instruction

statements all had an agreement percentage of 75% or better, meaning 75% or more of the participants marked “agree” that this item should

be a quality indicator. Therefore, none of the instruction statements were rejected in Round

Three and were then forwarded to the Round Four questionnaires.

Table 2  
*Agreement Levels for Instruction Statements in Round Three*

Statement	Percent Agree
<b>Items Meeting Consensus and Considered Quality Indicators</b>	
1. The curriculum is relevant to the local community	100.0
2. The curriculum is contextual	100.0
3. The curriculum meets the needs of students	100.0
4. Instructional materials including textbooks, workbooks, visuals, etc. are up to date	100.0
5. Enrollment in classes is appropriate (not too large or too small)	100.0
6. The instructor has a healthy relationship with others	100.0
7. The teacher has a passion for teaching and working with youth	100.0
8. A teacher who is dedicated	100.0
9. A teacher has adequate time to plan instructional activities	100.0
10. The program has a supportive administration	100.0
11. An active industry advisory committee that meets at least twice per year to review curriculum, program priorities, and program management	100.0
12. An advisory committee is in use	100.0
13. The teacher emphasizes safety	100.0
14. Instruction that is hands on learning	100.0
15. The instructional program uses community-based resources	100.0
16. Instruction is student centered	100.0
17. School administrators are satisfied with instruction	100.0
18. Instruction occurs in appropriate facilities	100.0
<b>Items Not Reaching Consensus as a Quality Indicators, but Moving to Round 4</b>	
1. A rigorous curriculum is in use	96.6
2. The curriculum integrates academic content with agriculture content	96.6
3. The curriculum serves multiple purposes (career preparation, college preparation, etc)	96.6
4. Instruction provides students with communication skills	96.6
5. Instruction provides students with the ability to function as a member of a team	96.6
6. There is instruction in personal development	96.6
7. The program includes opportunities for including Supervised Agricultural Experiences for all students in all courses	96.6
8. Assessment is holding students accountable and making them strive to reach a higher standard	96.6
9. Student work is recorded	96.6
10. A teacher who is personable	96.6
11. There is a balance between other components (SAE and FFA)	96.6
12. A defined mission, goals, and vision for the program	96.6
13. Student progress toward attainment of competencies is well documented	96.6
14. Teaching is geared toward the learning style and capabilities of the students	96.6
15. Out of class instructional activities (such as homework, projects, meetings, etc) are required	96.6
16. Student performance/mastery of topics is taught	96.6
17. The advisory committee is satisfied with instruction	96.6
18. Teacher performance is assessed at an acceptable level by administration or peers	96.6
19. Instruction incorporates leadership development	96.4

20. Reference materials are maintained on file in the department	96.4
21. The local program/curriculum is in compliance with all local and state requirements	93.1
22. Instruction helps to build multiple relationships (e.g. with school, community and, adults)	93.1
23. Instruction includes career development, exploration, awareness and preparation	93.1
24. The teacher is a member of professional organizations	93.1
25. There is an alumni association or other support group	93.1
26. The program has a supportive faculty	93.1
27. Students have access to a course syllabus/guide/curriculum	93.1
28. The instructional program is articulated with post-secondary programs	93.1
29. The teacher uses a lesson plan	93.1
30. Students are satisfied with instruction	93.1
31. The curriculum applies to complex situations	89.7
32. A teacher who has been recognized for quality teaching	89.7
33. The teacher has an archive of lesson plans	89.7
34. All Agricultural education students maintain an SAE	79.3
35. Instruction is competency based	75.9
36. Students take notes (have notebooks)	75.9

Note. 100% Agreement (marked yes) = Consensus, >75% Agreement = Undecided, <75% Agreement = Reject

Round Four sought to determine if semantics contributed to disagreement on Round Three statements. Only participants who disagreed with the inclusion of an item from Round Three participated in Round Four. Participants were asked if changing the wording of the item would change their agreement on inclusion as a quality indicator. If they agreed that they would include the indicator if a change were made, they were then prompted to explain how the indicator would need to be changed. One participant indicated the inclusion of one item if it was re-worded. The item, "teaching is geared toward the learning style and capabilities of the students" would be included if the wording was changed to, "teaching is designed to address individual student needs."

### Discussion

A limitation of this study should be noted. This study utilized the Delphi technique which utilized a purposive sample. Therefore, the generalizability is limited to the degree the panel of experts from this study reflect the profession.

It can be concluded that 37 indicators of quality instruction exist for agricultural education, as defined by the experts in this study. Experts identified statements related to

curriculum and methods including: a mix of classroom and laboratory instruction, hands-on learning, appropriate enrollment size in classes, and student centered instruction as indicators of quality instruction. This conclusion aligns with Fenstermach and Richardson's (2005) aspect of *good teaching*, in that classroom content coincides with academic standards in addition to instructors implementing moral and age appropriate teaching methods to ultimately enhance the learner's competence in the subject matter.

Additionally, results align with Fenstermach and Richardson's (2005) aspect of, *successful teaching*. Successful teaching includes the learner obtaining, with minimal proficiency, information intended by the instructor. The selected quality indicators which focus on curriculum and student outcomes align with this definition. Furthermore, the experts identified instruction being supported by appropriate financial, personnel, and community resources as quality indicators. This finding supports another Fenstermach and Richardson aspects of teaching, *quality instruction*, as the learner is submersed in a social environment supportive of teaching and learning, with opportunities to both teach and learn.

It is evident that that the experts in the study are thinking from these multiple lenses (good teaching, successful teaching, and quality instruction) and thus supports Fenstermach and Richardson's (2005) assertion that different aspects of teaching and learning exist. Although it is doubtful that experts were explicitly thinking about Fenstermach and Richardson, the experts, at the least subconsciously, recognize that the discussion of effective instruction is not one dimensional. A continued discussion in the profession revolving around quality instruction, broadly defined, will help shape thinking and refinement of these quality indicators.

The implication of the indicators being distributed also coincides with Goldrick's (2002) assertion that the quality of the instructor is more than initial certification. Although Goldrick (2002) looked beyond certification as a quality indicator, being a certified agriculture instructor is in alignment with both the *No Child Left Behind Act of 2001* and the *Higher Education Act Title II* as well as Spellings (2006) (United States Department of Education, 2001; 2008). These two acts also support teachers being involved in professional development, which was also a quality indicator. Professional development is a component of developing quality instruction that is generally overlooked (The Center for the Future of Teaching and Learning, 2007; Goldrick, 2002). Therefore, again, professional development should continue to be a priority for agricultural educators.

Even though there are 37 quality indicators, it cannot be assumed that each indicator has the same level of priority. For example, because of the priority in literature related to professional development, it seems this may be one indicator that is of higher priority than other indicators. Determining how these indicators should be weighted would shed light on priorities for the profession and priorities for pre-service education. The pre-service education point begs asking, do these priorities change over time? As Goldrick (2002) noted, veteran instructors rarely have the same accountability measures as their beginning counterparts. This would support identifying priorities in quality indicators for different levels of teacher maturity. Also in this priority conversation, there's a practical aspect to address. Thirty-seven quality indicators may

be cumbersome for one teacher to address at one time.

In addition, would the profession expect beginning teachers to achieve these indicators as well as experienced teachers? Is that fair to the beginning teacher? Perhaps there should be a version for new teachers and experienced teachers that allows for a graduated movement. In addition, a rubric could be constructed to indicate movement toward a particular indicator. This study is limited as to how to respond to these concerns; the question merely asked what quality instruction is. This does, however, provide more opportunities for research in the area of beginning teacher development.

Within agricultural education, some discrepancy exists in quality indicator support. The quality indicators in the Methods area, as identified by the expert panel, are consistent with the research conducted by Roberts & Dyer (2004) who found effective agriculture teachers must first master teaching methods. The experts also identified the characteristics of the agriculture teacher as an indicator of a quality instruction in agricultural education. This conclusion is consistent with Murray (1980), who stated that teacher characteristics affect program quality in secondary agricultural schools; as well as the National Research Council (1988) which stated, "...quality teachers are the critical ingredient for quality programs..."(p. 34). The experts also identified a program's curriculum as a quality indicator of instruction. This conclusion is consistent with the research conducted by the National Research Council (1988) which recommended that adequate attention be given to the development of new curriculums as well as the research conducted by Cano (1990) which suggested that curriculum should be developed to challenge students at all levels of cognition. This implies that research from this study is consistent with known literature in agricultural education and therefore, it is recommended that state staff and teacher educators continue to promote these quality indicators.

Other quality indicators were identified but lack support in agricultural education literature. Even more, there were some items from rounds 2, 3 and 4 that had literature support, but did not reach consensus among the experts as quality indicators. For example, the proposed quality indicator "a teacher who is personable" is

supported by Roberts et al. (2006) who concluded that people skills were a trait of successful agricultural science teachers; however, the expert panel did not reach consensus on this statement and therefore, it was not included as a quality indicator. This leaves the agricultural education field with some questions regarding the disconnect between its experts' knowledge and the literature. Some of the literature has scientific backing yet some is what is merely professed to be true. The profession should use this study as a springboard to begin conversations honing in on what quality instruction looks like in agricultural education. This conversation might allow for a unified structure that can be infused at a national level, which was criticized in the introduction of this study.

As education continues to muddle around in conceptualizing quality indicators, standards, and good teaching, broadly defined, the researchers of this study challenge other content area professionals to determine what constitutes

quality for them. The question raised earlier about whether or not evaluation techniques of teaching and learning are generalizable is still on the table. The evaluation may look differently when you change focus to student learning. This study provides one specific field some guidance regarding quality indicators, but it may be asking more questions of the education profession as a whole, than it does providing answers.

As other studies ensue, they should take into account and perhaps differentiate between good, successful, and quality teaching. In addition, it is suggested that the general population of agricultural educators, beyond this expert panel, should respond to this list of quality indicators to add generalizability to the study. This would also allow a researcher to investigate substantial differences among teachers, teacher educators and state supervisors. Because of the small sample size and the nature of the Delphi, this study was not able to differentiate findings by that characteristic.

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CHARLES CORDELL JENKINS, III, is an Agricultural Education Instructor at the Rolla Technical Institute, 1304 E. 10th Street, Rolla, MO 65401, [cjenkins@rolla.k12.mo.us](mailto:cjenkins@rolla.k12.mo.us).

TRACY KITCHEL is an Associate Professor in the Department of Agricultural Education at the University of Missouri, 126 Gentry Hall, Columbia, Missouri 65211, [kitcheltj@missouri.edu](mailto:kitcheltj@missouri.edu)

BRYAN HAINS is an Assistant Professor in the Department of Community and Leadership Development at the University of Kentucky, 507 Garrigus Building, Lexington, KY 40546, [bryan.hains@uky.edu](mailto:bryan.hains@uky.edu)