

OKLAHOMA PRIMARY STUDENTS' PERCEPTIONS
OF AGRICULTURE: A CONTENT ANALYSIS OF
AG IN THE CLASSROOM POSTERS

By

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OF AGRICULTURE: A CONTENT ANALYSIS OF
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Title of Study: PRIMARY STUDENT'S PERCEPTIONS OF AGRICULTURE: A
CONTENT ANALYSIS OF AG IN THE CLASSROOM POSTERS

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Abstract: The Oklahoma Ag in the Classroom program was created nearly four decades ago to educate primary students about the importance of agriculture and how it impacts their daily life. The Ag in the Classroom program utilizes teacher training workshops, school enrichment programs, and other key outreach initiatives, to inform the public about the importance of agriculture. To determine primary students' perceptions of agriculture, 177 posters created by third graders that had experienced the AITC curriculum were selected. A modified Draw-a-Scientist-Test (DAST) was used to guide a content analysis of the posters. Researchers identified five "key images" of agriculture and determined student's perceptions are traditional and/or stereotypical views of agriculture. Findings of this study should be shared with Ag in the Classroom stakeholders so they can adjust their efforts to educate youth on modern agricultural practices.

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CHAPTER I

INTRODUCTION

The expansion of American agriculture and agricultural education can be traced to the post-American Revolutionary war, when the newly formed nation was no longer dependent on Great Britain (True, 1929). America needed to expand its current agricultural practices to support the growing population. Benjamin Franklin helped lead the movement by establishing the Philadelphia Society for Promoting Agriculture (True, 1929). Its goal was to promote “a greater increase of the products of land within the United States” (True, 1929, p. 7). By the turn of the 21st century, the needs of agricultural education changed. Fewer Americans worked in production agriculture resulting in fewer people knowing where food comes from (Leising & Zilbert, 1994). Frick, Kahler, and Miller (1992) identified this as a lack of “agricultural literacy” (pg. 41).

In 1988, the National Research Council (NRC) released a report titled, “*Understanding Agriculture: New Directions for Education*” with the goal of creating a wave of change in agricultural education. Specifically, “agricultural education needs to become more than vocational agriculture” (National Research Council, 1998, pg. 1). Historically, vocational agriculture has been focused on students who wish to pursue a job in the agricultural industry. But the NRC stated that agriculture is too important to be only taught to that subset of students and that all students need a base understanding of agriculture (National Research Council, 1998).

Further, there was a push to diversify agricultural education beyond vocational agriculture. The National Research Council helped create programs like Agriculture in the

Classroom (AITC). A program designed to educate the public on the importance of agriculture and how it impacts daily life. AITC was recognized by the United States Department of Agriculture (USDA) in 1981, and educators have been able to use AITC as a supplement to teach agricultural literacy in the classroom (Pense, Leising, Portillo & Igo, 2005).

Even today, a common misconception of agriculture is a farmer wearing a straw hat and milking a cow or standing in the barnyard talking to animals (Vallera & Bodzin, 2016). According to DeWerff (1989) school aged children interpret agriculture as the “farmer, the cow, the tractor, and the rancher.” These misconceptions come as Americans are more than two generations removed from production agriculture “a huge disconnect has been created between citizens and agriculture as we know it” (Malloy, 2016, pg. 1). With the growing need to feed the world’s population with less resources to do so, creating an agriculturally literate society to support agriculture is still relevant (Malloy, 2016).

To combat this problem, programs like AITC are working to create an agriculturally literate society. AITC is working to increase agricultural literacy through K-12 education, by seeking to improve student’s understanding of agriculture “by applying authentic, agricultural-based content as the context to teach core curriculum concepts in science, social studies, language arts and nutrition” (Spielmaker, 2020.) They hope by doing so that agriculture will be valued by all (Spielmaker, 2020.)

Statement of the Problem

Since its creation in 1981, AITC has reached audiences through teacher training workshops, school enrichment programs, and other key outreach programs. While there has been quantitative data collected regarding the number of people AITC has impacted, little qualitative research has been conducted to measure the impact of AITC on those individuals understanding of agriculture.

Purpose

The purpose of this qualitative study was to investigate elementary students' perception of agriculture through their participation in the Ag in the Classroom poster contest.

Objectives

Two objectives guided this study:

1. Identify key images elementary students use to depict agriculture.
2. Identify students' perceptions of agriculture by analyzing images on students' posters.

Scope of the Study

This study examined posters created by third grade students in Oklahoma who participated in the 2020 Oklahoma Ag in the Classroom poster contest. Posters were borrowed from the Oklahoma Department of Agriculture for this study.

Significance of the Study

The majority of Americans do not understand the food and fiber system, creating a need for agricultural education and agricultural literacy (AFBFA, n.d.) The knowledge gap has been created as fewer people become involved in production agriculture (Iowa Ag Literacy, n.d.) Organizations such as the American Farm Bureau Foundation and Ag in the Classroom are working to create an agriculturally literate society. While research has been done to measure the number of people AITC programs reach each year, there has been little research done to understand the difference they are making. The results of this study will help stakeholders understand what images third grade students perceive as agriculture after participating in AITC.

Assumptions

The following assumption was made for this study:

1. Students received instruction on at least one Ag in the Classroom lesson prior to participating in the poster contest.

Limitations of the Study

The following limitation was identified for this study:

1. This study was limited by the fact the researcher was studying artifacts that were obtained from the Oklahoma Department of Agriculture. There was no interaction with students to learn more about their art and there was no pre-test to identify their prior knowledge of agriculture before participating in Oklahoma Ag in the Classroom poster contest.

Definitions of Terms

Agricultural Literacy – “possessing knowledge and understanding of our food and fiber system.

An individual possessing such knowledge would be able to synthesize, analyze, and communicate basic information about agriculture (Frick et al. 1991, pg. 52).

Pastoral Fantasy - point of view from which uneducated individuals view agriculture and rural living. The Kellogg Foundation (2002) surveyed Americans about their perceptions of rural America and started the conversation around the pastoral fantasy. Their study revealed, “respondents’ notions of rural America are dominated by images of the family farm, crops, and pastures. Further research was conducted by Lundy, Ruth, and Park (2007) that found people use images of the pastoral fantasy, such as red barns to make people think the fantasy is true.

CHAPTER II

REVIEW OF LITERATURE

Overview of Chapter

The purpose of this study was to investigate elementary students' perception of agriculture through their participation in the Ag in the Classroom poster contest. Chapter 1 provided an introduction to the study, and this chapter includes a review of related literature to said study.

Agricultural Literacy and Education

Researchers have long recognized Americans were at least three generations removed from production agriculture (Leising & Zilbert 1994). Rapid population growth has helped accelerate the lack of agricultural education or literacy (Clemons et al., 2018).

The first integration of agricultural education into the curriculum for all grade levels can be traced to the late 1700s (Dabney, 1904). Throughout the 20th century, agricultural education became a vocational study rather than included in core science curriculum. During the 1980s, a push for agricultural education reform was started. The National Research Council (NRC) published *Understanding*

Agriculture: New Directions for Education in 1988. This report acknowledged the challenges facing American agriculture and education, and the NRC identified two primary challenges with the agricultural education system at the time. First, agricultural education needed to become more than vocational. They encouraged the integration of agricultural education into science-based curriculum for all grade levels. Second, they found significant changes needed to occur within the vocational agriculture curriculum. The NRC recommended, “Beginning in kindergarten and continuing through twelfth grade, all students should receive some systematic instruction about agriculture” (National Research Council, 1988, pg. 2). They also encouraged additional integration into their current curriculum for other core subjects.

The terms agricultural literacy and agricultural education are often used interchangeably, but there is a distinct difference. Vallera & Bodzin (2016) report the focus on agricultural literacy is “educating students *about* the field of agriculture rather than preparing students for work *within* the field of agriculture” (pg. 102).

Expanding on the NRC’s recommendations for a push of agriculture education to create an agriculturally literate society, the American Association for Agricultural Education recommended a program model where agricultural education was pushed to the public on three levels. Those levels are primary and secondary students as well as adults (AAAE Ad Hoc Agricultural Literacy Work Group, 1992). Over the past 20 years, agricultural literacy efforts have focused only on students and teachers (Balschweid, Thompson, & Cole, 1998; Kovar & Ball, 2013; Meischen & Trexler, 2003). Additionally, agricultural literacy programs only reach a small part of the population (Kovar & Ball, 2013).

Agriculture in the Classroom

Since its creation in 1981, Agriculture in the Classroom (AITC) programs have been implemented across the United States. AITC has been credited as “the largest public effort to

educate people about agriculture” (Lesing, Pense, & Portiollo, 2003, pg. 1). The National Ag in the Classroom program is supported by the National Institute of Food and Agriculture and the United States Department of Agriculture. While AITC has a national branch, every program is managed differently depending on states needs’ and interests. State AITC programs may be housed within organizations such as Farm Bureau, land-grant universities, private associations or foundations, or within state governmental agencies (Spielmaker, 2020.). AITC programs were created with the guidance of the USDA. Aside from their guidance, USDA also offer grants to support The National Agriculture in the Classroom Organization’s mission for teaching agricultural literacy (Spielmaker, 2020). To accomplish their mission of educating people about agriculture, AITC programs have developed supplemental curriculum for teachers to incorporate into classrooms. Another key component of these programs are the teacher-training workshops. Researchers have noted little has been done to assess agriculture knowledge gained from participation in AITC (Pense, Leising, Portillo, & Igo, 2005).

Oklahoma Ag in the Classroom

Oklahoma Ag in the Classroom began in the 1990’s under the directive of helping school-aged children understand the importance of agriculture and how it impacts their daily lives (Oklahoma Ag in the Classroom History, n.d.). Key stakeholders, i.e., local teachers, industry leaders, and representatives from Oklahoma State University, met in 1991 to develop the current curriculum framework. The Oklahoma Wheat Commission and Oklahoma Beef Council donated resources to implement the programming matched by the state Legislature. Currently, Oklahoma Ag in the Classroom is a three-pronged partnership between the Oklahoma Cooperative Extension Service, Oklahoma State Department of Education, and the Oklahoma Department of Agriculture, Food, and Forestry (Oklahoma Ag in the Classroom History, n.d.). With its current efforts, Oklahoma Ag in the Classroom reaches more than 12,174 teachers and 247,464 students each year (Harmon, n.d.).

Content Analysis

One method researchers use to analyze written, verbal or visual communication is a content analysis (Cole, 1988). A content analysis is a systematic approach to describe and measure a lived experience (Downe-Wamboldt, 1992; Krippendorff, 1980; Sandelowski, 1995). Researchers use content analysis to define and categorize similar phenomena into categories or themes representing an audience or subset in the data (Krippendorff, 1980). Elo and Kyngas (2008) claim a content analysis can use one of two approaches for quantitative or qualitative data, either in an inductive or deductive fashion. If there is not enough prior knowledge or data of said phenomena an inductive content analysis is preferred (Lauri & Kyngas, 2005). A study using inductive content analysis allows similar phenomenon to be grouped into common themes to make a general statement (Chinn & Kramer, 1999).

A qualitative content analysis amongst communications study is because it is a very flexible method (Croucher & Cronn, 2019). There are seven steps to conducting a content analysis as outlined by Croucher and Cronn (2019). The steps are:

1. Conduct a review of literature related to your research questions or study objectives
2. Use one or more methods to collect your qualitative data
3. Prepare your data for the analysis
4. Start coding the data using your selected approach
5. During the coding process develop the coding framework to assist you in identifying your categories and themes
6. Identify your categories and themes that emerge from coding
7. Review your coded data with your research questions/study objectives in mind to determine your findings.

Using Children's Art for Research

Children's drawings and art have often been regarded as expressions depicting developmental stages of life (Leonard, 2006). Many researchers like Cohen and Ronen (1999) believe it can be used as a tool to gain insight into their perspectives. From the age of one, children use drawing as an "alternative language [to] illustrate their inner thoughts and feelings" (Cohen & Ronen, 1999, pg. 54).

The body of literature about children's art as a form of research for therapy is used to gain insight into a child's mind (Leonard, 2006). As children become older, they become less concerned with creativity and become focused on objectivity focusing on the world around them (Harris, 1983; Lindstorm, 1957). Lindstorm (1957) contends the perspective of objectivity and obsession with the world around them starts to develop between ages nine and twelve. In addition, Atkinson (1991) suggests children use drawings to capture the world around them and their lived experiences.

Research has been conducted in different sectors of the education field. Using children's art as a research tool started to appear in science-based disciplines during the 1980s. Brown, Henderson, and Armstrong (1987) evaluated student's perceptions of nuclear power plants through their drawings. Students were not given any instruction on nuclear energy; they participated in this study during their regular art class (Brown, Henderson, & Armstrong, 1987). King (1995) did similar research to understand children's concern pertaining to the environmental crisis. Their prompt was to draw a picture about what it means when someone says, "you have to save the planet" (Barraza, 1999, pg. 51). Other research was conducted on children's ideas about technology (Symington, Boundary, Radford, & Walton, 1981) and students' perceptions of a scientist (Mead & Metraux, 1975).

Using children's drawings as a research tool has proved to be robust and successful (Lewis & Greene, 1983). Children often do not like answering questions, "drawing tests can be completed quickly, easily and in an enjoyable way" (Lewis & Greene, 1983, pg. 49).

There are many tools and research methods used to evaluate children's art. One of the commonly used exercises is the Draw-a-Scientist Test (DAST). DAST examines student's stereotypical perceptions of scientists (Miele, 2014). After being introduced in 1983, researchers simply asked students to draw a picture of a scientist (Chambers, 1983). To improve objectivity and reliability of DSAT, Finson, Beaver, and Cramond (1995) developed the DSAT checklist. The checklist included seven standard and eight alternative characteristics to be used to evaluate the drawings. Their version of the assessment produced more realistic depictions of scientists. Similar exercises have been done to assess environmental education outcomes (Flowers, Carroll, Green & Larson 2015) and to assess first-grade students' reading readiness (Hale & Boozer, 1998).

Theoretical Framework

This study used the knowledge gap theory proposed by Tichenor, Donohue, and Olien (1970). They propose that there are two groups of people with knowledge regarding understanding common knowledge: a group with the understanding and higher level of knowledge and a group with little to no understanding demonstrating a lower level of knowledge (Tichenor, Donohue, & Olien, 1970). Traditionally these groups have been split by socio-economic status and levels of education (Lamm, Taylor, & Lamm 2016). Later research by Kwak (1999) individuals may be motivated to learn more about a topic discovered because of personal interest.

A knowledge gap pertaining to agriculture resulted from at least three generations of Americans being removed from production agriculture (Leising & Zilbert 1994). This has created

the lack of agricultural literacy as Frick, Kahler, and Miller (1992) discussed. Current agricultural literacy efforts, such as those by AITC need to be measured to understand the knowledge gap better. A better understanding of the lack of agricultural knowledge has the potential to inform program leaders responsible for AITC program development.

CHAPTER III

METHODOLOGY

This chapter details the methods used by the researcher to conduct this study. Those items are an overview of the research design, instrumentation, and data analysis.

Sample

Every year, Oklahoma AITC hosts a state poster contest for K-12 students who have participated in AITC programs. Participants are instructed to incorporate the contest's theme into their design. The theme for the posters included in this study was "Explore Oklahoma Agriculture." Before students created posters, teachers taught a variety of AITC curriculum about that year's theme. Winners from each grade category are showcased for the state legislators and displayed on the Oklahoma AITC website.

This study included 177 posters from third-grade students. This grade was selected because the students received instruction related to the National AITC learning objective: theme 5 – culture, society, economy, and geography (Spielmaker, 2020). This learning objective also matched the theme of the contest, "Explore Oklahoma Agriculture."

Research Design

This study used content analysis to answer the research questions. A content analysis is a systematic approach that allows researchers to indirectly observe human behavior by analyzing of

their communications (Fraenkel & Wallen, 2009). Content analysis can be traced back to the 17th century when the Catholic church was conducting analysis of written text (Groth, 1948). The first scholar to publish their work in this field was Woodward (1934) in an article called “Quantitate Newspaper Analysis as a Technique of Opinion Research”. Since then this method has evolved from its early journalistic uses to analyze “all kinds of verbal, pictorial, symbolic, and communication data” (Krippendorff, 2004, p.17).

To ensure a clear and systematic approach was used to define the artifacts, a content analysis was used based on its utility to evaluate any type of recorded communication. The various types of communication can be “analyzed at many levels (image, word, roles, etc.), thereby creating a realm of research opportunities” (Kolbe & Burnett, 1991, pg. 243).

The researcher used a modified version of Farland-Smith’s (2012) Draw-a-Scientist-Test to conduct the content analysis. Farland-Smith established three scoring categories for her DAST study. She evaluated the drawings based on appearance, location, and activity; scoring each category 0-3. Table 1 shows the modified rubric created for this study.

Table 1

Rubric for Evaluating AITC Posters

Categories	Appearance	Location	Activity
Scores	0 – cannot be categorized 1 – pastoral fantasy 2 – traditional 3 – boarder than traditional		

Note: Modified version of Farland-Smith’s (2012) DAST

The three main categories from Farland-Smith’s rubric are intact for this study, but the descriptions of scores were revised to meet the researcher’s needs. The scoring descriptions are a part of the codebook to help researchers understand the three scoring categories. The researcher

kept the same score 0 (cannot be categorized) from Farland-Smith but adopted descriptors from literature for 1-3. A score of 1 can be considered a part of the pastoral fantasy. The Kellogg Foundation (2002) started the conversation surrounding American's perceptions of rural America and agriculture. Specht and Rutherford (2016) further expanded that research by exploring how the movie industry has influenced American's memory of agriculture into a pastoral fantasy. The Kellogg Foundation research study outlined principles of the pastoral fantasy as "small storybook family farms" with fields of crops and rolling green hills (Specht & Rutherford, 2016, pg. 13). Description of images for traditional agriculture were adapted from Koeller (2013). The researcher defined broader than traditional as anything that includes multiple elements of agriculture, a scene that is not a stereotypical or traditional barnyard, includes technology while being unique and creative.

Unit of Analysis

In this study, the unit of analysis was each poster. The unit of analysis can be defined as an element of that content "based on a definable physical or temporal boundary or symbolic meaning" (Riffe et al., 1998, pg. 68). A total of 177 posters from third-grade students were included in this content analysis. Because the poster was the unit of analysis, if an image appeared more than once on the poster it was only counted once in the total for key images.

Validity and Reliability

This study established intercoder reliability using the criteria established by Lombard, Snyder-Duch & Bracken (2002). Intercoder reliability or "intercoder agreement" (Tinsley & Wiss, 1975) is a major key to conducting a content analysis. Singletary (1993) states intercoder reliability is "near the heart of content analysis" if the coding is not reliable, the analysis cannot be trusted" (p. 294). When there are more than two researchers, coding the same data they use intercoder reliability to ensure the same conclusions are met (Lombard, Snyder-Dutch, &

Bracken, 2002). When there is a significant amount of disagreement among coders it implies the research is weak, and cannot be trusted (Kolbe & Burnett, 1991). Aside from being a step to validate the coding process, using this method also allows researchers to establish reliability and to divide the coding work among all the coders (Neuendorf, 2002).

Lombard, Snyder-Dutch, and Bracken (2002) laid out ten standards for researchers to use to calculate and report intercoder reliability. The guidelines are as follows:

1. “Calculate and report intercoder reliability.
2. Select one or more appropriate indices.
3. Obtain the necessary tools to calculate the index or indices selected.
4. Select an appropriate minimum acceptable level of reliability for the index or indices to be used.
5. Assess reliability informally during coder training.
6. Assess reliability formally in a pilot test.
7. Assess reliability formally during the coding of the full sample.
8. Select and follow an appropriate procedure for incorporating the coding of the reliability sample into the coding of the full sample.
9. Do not do any of the following:
 - Use only percent agreement to calculate reliability.
 - Use Cronbach’s alpha, Pearson’s r, or other correlation-based indices that standardize coder values and only measure covariation.
 - Use chi-square to calculate reliability.
 - Use overall reliability across variables as a standard for evaluating the reliability of the instrument.
 - Use overlapping reliability coding, in which judges code overlapping sets of units.
10. Report intercoder reliability in a careful, clear, and detailed manner in all research reports” (Lombard, Snider-Dutch, & Bracken, 2002).

Following these guidelines, the researcher elected to use Cohen’s Kappa and percent agreement to calculate reliability.

Intercoder Reliability

Prior to coding the main dataset, coders met to review the codebook and train to reach a level of reliability. The codebook, featured in Appendix A included the rubric with descriptions for each possible score for the three categories. Coders train to “reduce the amount of variability in how [coders] view and interpret data” (McHugh, 2012, p. 276). To calculate reliability, the two coders used a sample of 30 posters, separate from the main dataset, to evaluate. The training scores were put into an Excel document and used an online reliability tool (Freelon, n.d.) to calculate reliability using Cohen’s Kappa and percent agreement.

Cohen suggests that his Kappa can be interpreted as: ≤ 0 indicates no agreement while 0.01-0.20 as none to slight, 0.21-0.40 as fair, 0.41-0.60 as moderate, 0.61-0.80 as substantial, and 0.81-1.00 as almost perfect agreement. For this study, Cohen’s Kappa was calculated for each of the three scoring categories. The calculations for agreement in this study are recorded in Table 2.

Table 2

Reliability Scores of the AITC Poster Content Analysis

	Appearance	Location	Activity
Cohen’s kappa (<i>k</i>)	0.945	0.847	0.902
Percent agreement	96.7%	90.0%	93.3%

Note: Freelon’s (n.d.) ReCal2 tool was used to calculate Cohen’s kappa and percent agreement.

There are no set standards for determining an acceptable level of reliability. Neuendorf (2002) reviews the general “rule of thumb” outlined by several researchers (Banerjee, Capozzoli, McSweeney & Sinha, 1999; Ellis, 1994; Frey, Botan, & Kreps, 2000; Krippendorff, 1980; Popping, 1988; and Riffe, Lacy & Fico, 1988) concluding “coefficients of .90 or greater would be

acceptable to all, .80 or greater would be acceptable in most situations, and below that, there exists great disagreement” (p.145). The coders in this study reached an almost perfect agreement (0.81-1.00) on all three categories meeting all reliability requirements and they could move on to code the main sample of 177 third-grade posters.

CHAPTER IV

FINDINGS

Chapter IV reports findings based on the objectives of this study. Findings are organized by each objective accompanied with data in figure and narrative form.

Findings Associated with Objective 1

The first objective of this study was to identify the key images elementary students use to depict agriculture.

One hundred seventy-seven posters from third-grade students were reviewed as a part of this study. Researchers kept note of reoccurring images as they conducted their content analysis. After the coding was completed, the most common images were barnyard animals, a red barn with a silo or windmill, and various types of hay. Table 3 displays the total appearances of these images.

Table 3

Frequency of Key Images in the AITC Poster Content Analysis

Key Images	Total Appearances	Percentage of Posters
Animal(s)	127	71%
Red Barn	115	65%
Silo and/or Windmill	54	30.1%
Hay	41	23.2%
Tractor	32	18%

Note. 177 total posters were included in this study. If an image appeared more than once on a poster, it was only counted once.

The coders also noted 24 additional barns that were not red appeared in the sample. Eight more posters displayed animals that were walking on two feet, wearing clothes, or talking with the people featured. Figure 1 displays a traditional image of agriculture featuring several key images.

Figure 1

A “Traditional” Image of Agriculture



Note. This poster was a part of the study and features four key images; the animals, red barn, windmill/silo, and hay.

Findings Associated with Objective 2

The second and final objective for this study was to describe students' perceptions of agriculture by using a content analysis of images found on students' posters.

The researchers coded 177 posters using the methodology outlined in Chapter 3. They examined the poster's content for its appearance, location, and activity. Most of the posters received a 1 on the scale, scoring them in the pastoral fantasy category. Table 4 outlines the results of the content analysis.

Table 4*Content Analysis Results – Objective 2*

Poster Number	Appearance	Location	Activity
1	0	0	0
2	2	2	2
3	0	2	0
4	2	2	2
5	1	1	2
6	2	2	2
7	2	2	2
8	2	2	2
9	3	3	3
10	2	2	2
11	1	1	1
12	2	0	2
13	2	2	2
14	1	1	1
15	3	3	3
16	2	1	1
17	1	1	1
18	3	3	3
19	0	0	0
20	1	1	1
21	3	3	3
22	2	2	2
23	1	1	1
24	1	3	2
25	1	1	1
26	1	1	1
27	1	1	1
28	3	3	3
29	2	2	2
30	3	3	3
31	1	1	0
32	1	2	1
33	1	1	1
34	1	1	2
35	1	1	1
36	1	1	1
37	0	0	0
38	2	2	3

Table 4 (Continued)

Poster Number	Appearance	Location	Activity
39	3	3	3
40	1	1	1
41	1	1	1
42	1	2	0
43	1	1	1
44	1	1	1
45	1	1	1
46	2	2	2
47	1	1	1
48	1	1	1
49	3	2	3
50	2	2	2
51	1	1	1
52	1	1	2
53	1	2	2
54	1	2	2
55	3	3	3
56	1	2	3
57	1	0	0
58	1	2	2
59	1	1	2
60	2	2	2
61	2	2	2
62	3	3	3
63	3	2	3
64	2	2	2
65	2	2	2
66	1	1	2
67	2	2	3
68	1	1	1
69	1	1	1
70	1	1	1
71	2	1	1
72	1	1	1
73	1	1	0
74	3	2	2
75	1	1	1

Table 4 (Continued)

Poster Number	Appearance	Location	Activity
76	1	1	1
77	1	2	0
78	1	1	1
79	2	2	2
80	2	2	3
81	2	2	2
82	1	1	1
83	2	2	3
84	0	0	0
85	1	2	2
86	1	1	1
87	2	2	2
88	1	1	1
89	1	1	2
90	2	1	1
91	1	1	1
92	0	0	0
93	3	2	3
94	0	0	1
95	0	1	0
96	2	3	3
97	0	0	0
98	1	2	2
99	2	1	1
100	1	0	2
101	3	2	2
102	1	1	1
103	1	1	0
104	1	1	1
105	1	2	1
106	2	2	2
107	2	1	1
108	1	1	1
109	1	2	1
110	0	0	0
111	2	2	2
112	1	1	0

Table 4 (Continued)

Poster Number	Appearance	Location	Activity
113	0	1	0
114	1	1	0
115	1	2	1
116	1	1	2
117	2	0	1
118	3	1	3
119	1	1	1
120	1	0	1
121	1	0	1
122	1	2	2
123	1	1	2
124	3	2	3
125	2	2	2
126	3	2	3
127	3	2	3
128	2	2	1
129	2	1	2
130	1	1	1
131	1	0	1
132	0	0	0
133	1	1	1
134	1	2	1
135	1	1	1
136	1	1	1
137	0	0	0
138	1	1	1
139	2	1	2
140	2	0	1
141	1	1	1
142	1	2	2
143	1	1	2
144	1	1	0
145	1	0	0
146	1	2	1
147	1	0	1
148	1	1	1
149	3	2	3

Table 4 (Continued)

Poster Number	Appearance	Location	Activity
150	2	2	2
151	2	2	2
152	2	1	2
153	3	3	3
154	3	3	3
155	3	2	3
156	2	2	2
157	3	2	3
158	3	3	3
159	1	1	2
160	2	2	3
161	2	2	3
162	2	1	2
163	2	1	2
164	0	1	1
165	1	1	2
166	2	1	2
167	2	0	1
168	1	0	1
169	0	0	0
170	1	0	1
171	1	1	2
172	1	1	1
173	3	3	3
174	1	1	1
175	2	2	2
176	2	1	2
177	1	1	1

Note: Posters were scored on a 0 - 3 scale. 0 = cannot be categorized, 1 = pastoral fantasy, 2 = traditional, and 3=broader than traditional.

On the study's 1 – 3 scale, 1 being pastoral fantasy and 2 being traditional, the posters scored on average 1.4 – 1.5 in each category. Only 6 students scored broader than traditional on all three categories. Those posters featured images relating to agritourism and modern farm equipment. In each respective category, the most frequent score was 1, placing them in the pastoral fantasy.

CHAPTER V

CONCLUSIONS, IMPLICATIONS, AND RECOMMENDATIONS

Conclusions Related to Objective One

The first objective of this study sought to identify the key images elementary students use to depict agriculture.

From this study, researchers were able to draw conclusions regarding what third-grade students, who received at least one lesson from AITC, perceived as key images of agriculture. Posters in this study featured a red barn, 65% of the time with fencing and some type of hay, 23% of the time. This conclusion supported earlier research by Specht and Rutherford (2016); regarding a traditional view of agriculture can be viewed as a red barn surrounded by a white fence, haystacks spread throughout, with a farmhouse.

A key image that was more prevalent than the red barn depicted was animal(s). At least one animal appeared on 71% of the posters while red barns were on 65% of the sample. The other three key images (silo/windmill, hay, and tractors) were significantly less than the animals and red barn. Twenty four more barns appeared that were not the traditional or stereotypical red

barns. Additionally, 8 more posters featured animals talking, wearing clothes, or standing on two feet. Figure 2 displays an example of this.

Figure 2

A “Fantasized” Image of Agriculture



Note. In the bottom right corner of this poster, it features “Hayley the horse” talking to two individuals.

From this study, we conclude a majority of students view red barns and animals as key identifiers for agriculture. These key images are common in literature based on outdated or stereotyped views of agriculture, typically accompanied with a farmer wearing bib overalls and a straw-hat (Koller, 2013). These images frequently appear in children’s books as well, depicting a stereotypical view of agriculture and lacking modern agriculture images (Koller, 2013). Wooten (2019) conducted a content analysis of agriculture images found in *Little Golden Books*. Just like this study, Wooten found the most prevalent key image was animals. In this study only 8 posters

featured animals of the pastoral fantasy style but in Wooten's (2019) study they were the most dominant. From this study, researchers concluded Oklahoma students have a more realistic view of animals.

Conclusions Related to Objective Two

The second objective of this study sought to describe students' perceptions of agriculture through conducting a content analysis of images found on students' posters. By conducting a content analysis, researchers were able to conclude the students viewed agriculture as a part of the pastoral fantasy, with their views trending towards traditional agriculture.

Some students perceived a different level of agriculture than most. Their posters were broader than traditional incorporating newer technologies and practices into their artwork. Figure 3 represents one of those posters.

Figure 3

A “Broader than Traditional” Image of Agriculture



Note. This poster is an example of modern agriculture practices, earning a score of broader than traditional.

The poster in Figure 2 showcases a pumpkin patch featuring a mother watching her daughters as they look through the pumpkins and corn maze. That student may not know the term agritourism, but they have the ability to depict the concept and how it plays a role in agriculture. Multiple posters also featured a smoothie or fruit stand on the side of the road. Others included newer technology such as tractors with an enclosed cab or one with a harvester trailer collecting the silage being harvested.

From this study, researchers were able to conclude the students still perceive agriculture as a part of the pastoral fantasy and very traditional. The pastoral fantasy is not necessarily bad. If someone has preconceptions of agriculture, it could be helpful in teaching them about modern agriculture practices. As agricultural professionals, our job is to educate them so they can draw

conclusions from the pastoral fantasy to real life. By doing so they can become agriculturally literate and start to make informed decisions pertaining to agriculture.

Recommendations for Future Research

Researchers identified third-grade student's perceptions of agriculture and five key agricultural images. Future research should be conducted to identify students' perceptions of agriculture pre-post completion of their participation in AITC programming. This study only examined posters created after students received instruction from AITC. Further research should be conducted to identify key images and perceptions of agriculture amongst all grades involved in AITC. It would also be beneficial to conduct research on the factors that influence children's perspectives of agriculture. Does gender play a role in their perceptions? Are these students from an urban or rural background or have they been involved in agriculture before? Additionally, a content analysis should be conducted about AITC curriculum to determine if the images reflected are the ones students view as primary identifiers of agriculture. Furthermore, a meta-analysis of literature should be conducted to see how student's perceptions of agriculture have changed over the years. Since its inception in the 1980s, has AITC adapted its curriculum to represent agriculture today or does it still represent the past?

Recommendations for Future Practice

AITC professionals should incorporate modern agriculture practices and technology into their curriculum. Based on this study, student's perceptions of agriculture are outdated, and they do not connect newer technology to agriculture. While the traditional red barn is iconic, a rebrand of materials incorporating it and modern images of agriculture would be beneficial to eliminate outdated or stereotypical images of agriculture. Over the last two decades, STEM education has worked its way into student's education both in and outside of the classroom. Extension and School-Based, Agricultural Education have an opportunity to make a push and embrace

agricultural education in the same way STEM has been incorporated. The need for agricultural education has not diminished over the years, and it is has grown greater. This need can only be addressed if a progressive effort is made. This can be done by creating a curriculum about modern technology or practices, such as drone technology or genetically modified organisms.

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APPENDICES

APPENDIX A – CODE SHEET WITH DESCRIPTIONS OF SCORING CATEGORIES

Category	Description	Score (0-3)
Appearance	<p><i>*see next page for description for scoring</i></p> <p>Score illustrations “1” if they are a part of the pastoral fantasy. “2” can be referred to as “traditional.” Score “3” in appearance can be referred to as “broader than traditional.” Illustrations which score a “0” in appearance can be referred to as “can’t be categorized.”</p>	
Location	<p>Score illustrations “1” if they are a part of the pastoral fantasy. “2” can be referred to as “traditional.”</p> <p>Score “3” in appearance can be referred to as “broader than traditional.” Illustrations which score a “0” in appearance can be referred to as “can’t be categorized.”</p>	
Activity	<p>Score illustrations “1” if they are a part of the pastoral fantasy. “2” can be referred to as “traditional.”</p> <p>Score “3” in appearance can be referred to as “broader than traditional.” Illustrations which score a “0” in appearance can be referred to as “can’t be categorized.”</p>	
Total Score (Max 9)		
What images appeared on this poster?		

Scoring Descriptions

Appearance: Illustrations which score a “1” in appearance can be referred to as a part of the “pastoral fantasy.” These drawings may contain a red barn or farmer in a straw hat standing in the barnyard with their animals (Vallera & Bodzin, 2016). Illustrations which score a “2” in APPEARANCE can be referred to as “traditional” farmer wearing bib overalls, straw hat or present other outdated and/or stereotyped portrayal of farmers (Koller, 2013).

Illustrations which score a “3” in appearance can be referred to as “broader than traditional.” These drawings include multiple elements of agriculture, and new technology. These drawings may also include a non-traditional setting. Illustrations which score a “0” in appearance can be referred to as “can’t be categorized.” These drawings may contain a stick figure or stick animal with no other elements of agriculture.

Location: Illustrations which score a “1” in location can be referred to as a part of the “pastoral fantasy.” These drawings contain a location that resembles a stereotypical children’s book often featuring a red barn, grain silo, hay or a chicken coop. These drawings may also include a family farm with a small farm stand and open hills across the landscape (Kellogg, 2002). Illustrations which score a “2” in LOCATION can be referred to as “traditional.” These locations may feature a red barn surrounded by white fence, haystacks spread throughout, with a farmhouse (Specht & Rutherford, 2016).

Illustrations which score a “3” in location can be referred to as “broader than traditional.” These drawings include a scene that is not a stereotypical or traditional barnyard but are unique and creative. Illustrations which score a “0” in location can be referred to “cannot be categorized.” The scene of this drawing may be difficult to determine or not related to agriculture.

Activity: Illustrations which score a “1” in activity can be referred to as a part of the “pastoral fantasy.” These drawings reveal an activity that may include animals talking, walking upright instead of on all fours (Koller, 2013) or different species of animals all in one pin. Illustrations which score a “2” in activity can be referred to as “naive or traditional.” These drawings reveal an activity similar to a farmer sitting on a stool milking a cow or collecting eggs from a chicken coop. This category also includes drawings that feature a farmer driving a tractor.

Illustrations which score a “3” in activity can be referred to as “Broader than Traditional.” These drawings include multiple elements of Oklahoma Agriculture. Including but limited to livestock, crops, facilities and equipment. It may also show an interaction or invention accruing with agriculture and shows byproducts from Oklahoma agriculture. Illustrations which score a “0” for activity can be referred to as “difficult/unable to determine.”

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