An Industry Assessment of Employability Skills Needed in Concentrated Animal Feeding Operations of the Swine, Dairy, and Fed-Beef Industries

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Abstract
The purpose of this study was to identify the desired employability skills needed by entry-level employees entering a profession in concentrated animal feeding operations (CAFO's) within the swine, dairy, and fed-beef industries. The study's population consisted of CAFO employers at different management levels within a designated geographical region. Overall, 31 skills were observed that examined the level of preparedness of employees and the level of importance of those skills. Data were collected through an online survey. Participants in this study valued honesty/integrity and dependability/dedication to the job above other interpersonal skills. Other skills employers valued included proper safety procedures, animal management/welfare, and livestock handling. It was recommended industry stakeholders implement and model characteristics, which support and encourage honesty and integrity in the workplace. Educational institutions should seek to develop programs where students are able to participate in real life applications that meet industry needs.

Introduction
A constantly changing labor market has created new challenges. Students must acquire adaptable, transferable skills as well as specific content knowledge to be adequate employees (Wise, 2008). Employability skills are commonly termed as generic skills, non-technical skills, capabilities, key competencies, personal transferable skills, soft skills and attributes and are

considered relevant to both entry-level and established employees (Watty, Jackling, & Wilson, 2012). Less than 20 % of those who go into the workforce from high school will receive formal, on-the-job training, suggesting the fate of the majority of high school graduates with no higher education relies on low-skill/low-wage work or some type of career and technical education (CTE) training in high school. (Gray, 2009).

Employers in the U. S. argue young adults are not entering the workforce with the skills necessary to compete in for 21st Century employment (Symonds, Schwartz, & Ferguson, 2011). In 2005, 60% of U. S. manufacturing companies surveyed expressed high school graduates were poorly prepared for entry-level jobs (National Association of Manufacturers, 2005). Robinson and Garton (2008) found college graduates entering the workforce do not believe they can perform the employability skills at the level required for success in their positions. Employers tend to find competent workers from other countries because resident graduates often lack employability skills (Husain, Mokhtar, Ahmad, & Mustapha, 2010). Even though many graduates possess excellent academic qualifications, a major concern from employers is these graduates do not have the right combination of skills and personal attributes (Daud, Sapuan, Abidin, & Rajadurai, 2011). Studies prove employability skills are a need in the education system to ensure graduates are competent and competitive (Husain et. al., 2010).

Career and Technology Education (CTE) is an educational strategy for providing young people with the academic, technical, and employability skills and knowledge to pursue postsecondary training or higher education and enter a career field prepared for ongoing learning (Partnership for 21st Century Skills, 2010). Courses that focus on CTE project-based learning strive to incorporate "rigorous projects which are carefully planned, managed, and assessed to help students learn key academic content, practice 21st Century Skills (such as collaboration, communication and critical thinking), and create high-quality, authentic products and presentations" (Ravitz, Hixson, English, & Megendoller, 2012, pg.5). Kazis (2005) stated the rigor and relevant curriculum of a CTE program makes the case there is need in today's classrooms for high-quality curricula that incorporates rigorous coursework with an occupational curriculum. Curricula includes highlighting applied teaching and learning styles tied to careers to help make learning relevant to the student. Connecting students to labor markets and employers helps provide ongoing exposure to the world of work. State leaders and stakeholders are collaborating to develop rigorous, high-quality standards that build on industry expectations for the competencies required for success in each field (Brand, Valent, & Browning, 2013).

More than half of all workers in the food industry are in the production environment as front-line supervisors, managers of production and operation, bakers, slaughterers and meat packers, food batch makers, inspectors, testers, sorters, and samplers (Napoleon, Freedman, Seetharaman, & Sharma, 2006). As the population of the world continues to increase and the available land for food production decreases, the need for successful agricultural production and marketing becomes increasingly more important (Barrick, Samy, Gunderson, & Thoron, 2009). As the land availability for food production decreases, the need for concentrated animal feeding operations (CAFO) will increase. Because of its unique diversity, agriculture is one of the primary drivers of the [REGION] economy. The most common CAFOs in the [REGION] are in the swine, dairy, and fed-beef industries. These industries not only provide animal protein to countries around the globe, but have large economic impacts in the area as well.

The swine production industry (which is the process of farrowing, nursery, and the finishing of the swine animal) within the [REGION] and surrounding areas accounts for more than 17,000 jobs and a wealth generated economic contribution of an estimated $1.1 billion (Guerrero & Amosson, 2013). The milk production sector (which is the process of producing milk) attributes to over 10,000 jobs and an economic contributing estimate of $1.1 billion (Guerrero, Amosson, & Jordan, 2012). The fed-beef industry (which is the process of finishing the fed-beef animal for an average of 140 days before processing) accounts for over 12,000 jobs and an economic contribution of over $14 billion (Guerrero, Amosson, & McCollum, 2013).

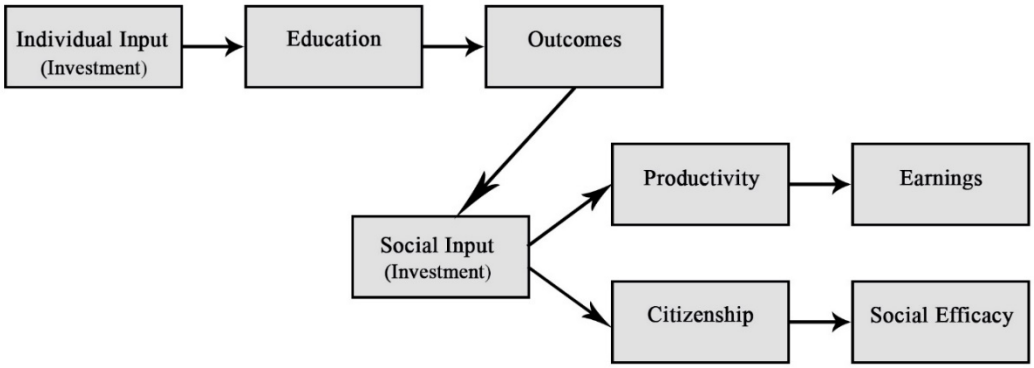
Based on employment estimates within these CAFOs, and the vast economic contributions they potentially deliver to local communities, the need for individuals with employable skills to fill these positions is paramount. Employers in the U. S. argue young adults are not entering the workforce with the skills necessary to compete in the 21st Century workforce (Symonds, Schwartz, & Ferguson, 2011). This study seeks to determine specific employability skills needed in CAFOs within the swine, dairy, and fed-beef industries of the [STATE REGION].

Theoretical Framework

Human Capital Theory (Swanson, Holton, & Holton, 2001) served as the theoretical framework for this study. This theory is illustrated in Figure I.

Figure I: Human Capital Theory (Swanson, Holton, & Holton, 2001)

Swanson (2001) defined human capital as an investment in people, while van Loo and Rocco (2004) determined human capital "is an investment in skills and knowledge" (p.99). Sleezer and Denny (2004) acknowledged the important role human capital, specifically knowledge and innovation capacities, will play in the new economy. They noted the number of



highly qualified workers is declining, which will continue to be problematic over the coming years, creating a high demand for college-educated workers.

Effective interaction involves knowing how to influence others within the organization's culture (Carnevale, 1990). Data from Wilhelm, Logan, Smith, and Szul, (2002) demonstrated employers value the human relations' skills higher than the conceptual and technical skills. Harvey (2000) listed two sets of attributes employers desire in their employees: interactive and personal. Communication, teamwork and interpersonal skills were described as interactive attributes required by employers.

Human capital is referred to as a process involving training, education and professional initiatives to improve the knowledge, skills, abilities, values and social assets that lead to employee job satisfaction and performance while improving the performance of the company (Marimuthu, Arokiasamy, & Ismail, 2009). There are two ways human capital skills required for success in any occupation may be acquired: on-the-job training and education whether formal or informal (Laband & Lentz, 1983). The cost of developing human capital is increasing (Husain et.al., 2010). Employers expect educational institutions to produce graduates with employability skills required by the market without additional training from the industry.

Review of Literature

Findlay (1993) posited regardless of the profession, "competence in one's professional work role is important in the overall learning process" (p. 46). Industry expects workers at all levels to solve problems, create ways to improve the methods they use, and engage effectively with their coworkers (Bailey, 1997; Packer, 1998). Employers seek trainable recruits more often than before and look less for trained recruits (Maclean & Ordonez, 2007). The lack of soft skills can deter ones career despite have the necessary technical ability and professional expertise (Klaus, 2010).

Students' high school experiences too often fail to prepare them for postsecondary education or for the rigors of work in an information-based economy (Bangser, 2008). At the outset, it is crucial to make a distinction between training for employment and training for employability, between a trained recruit for the workforce and a trainable recruit (Maclean & Ordonez, 2007). Employers reported the greatest training needs to update employees' skills and productivity, in addition to technical skills, were related to interpersonal communications and teamwork, individual responsibility and work habits, basic academic skills, and life skills such as time management, punctuality, and courtesy (Clagett, 1997).

Agricultural and natural resources leaders value individuals who can think critically and communicate clearly in all situations, including during a crisis or when solving a problem (Easterly, Warner, Myers, Lamm, & Telg, 2017). Klein (1990) declared educating students for a career in agriculture and natural resources demands greater skills plus a more holistic perspective on its interaction with society. Morgan (2010) found many of the agriculture competencies desired by employers, such as ability to meet deadlines, reliability, dependability, and strong work ethic, were taught indirectly through university structure as opposed to being taught through curriculum. Holzer (2012) also underscored the deficit of middle and highly skilled workers to fill higher wage positions and suggested education and skills of prospective employees fail to keep pace with employer needs.

As the array of issues facing the agriculture community and the content imperative to the solving emerging problems continues to expand, the agricultural education system could broaden and refine itself to address the challenges associated with supplying food globally while sustaining a natural system (Easterly et al., 2017). To an extent, CTE courses such as agricultural education exists to help prepare individuals for careers (Castellano, Stringfield, & Stone, 2003). Education systems do not exist in social and economic isolation, but function to meet the particular needs of a particular society at a particular time (Maclean & Ordonez, 2007).

Public schools of the early 1900s, funded by the Smith-Hughes Act of 1917, bore the responsibility for preparing compliant and reliable workers to meet the demands of factories, mills, offices, and stores (Perry & Wallace, 2012). Today, some are advocating competence of new workforce entrants should be certified by credentials, separate from educational degrees, when earned, validate the prospective of an employee's relevant qualifications (Eisner, 2010). Providing curriculum where students can acquire technical skills is essential and should be initiated during high school (Lynch, 2000). Some states have moved to create such a nationally recognized "work readiness" credential, signifying one's ability to perform entry-level work, with performance attributes defined by employers (Eisner, 2010). Some CTE courses help students develop analytical, synoptic and presentational skills, which are highly valued in the modern economy (Lowden, Hall, Elliot, &Lewin, 2011).

For programs to produce employable graduates, the program and learning environment must be considered purposeful and systematic (Knight & Yorke, 2003). Since university faculty play a vital role in the development of their own curriculum, the disconnect between professors' perceptions of industry needs and the actual needs of the industry can be problematic in preparing employment ready graduates (Morgan & Rucker, 2013). It is widely recognized, academia should prepare students for the job market as well as provide general education about relevant topics (Urutyan & Litzenberg, 2010).

The characteristics many new graduates lack is: communication (presentation and written), teamwork, interpersonal skills, work ethic, time management, meet deadlines, realistic job expectations, job loyalty, and professionalism (Eisner, 2010). Since employees must do more to help the company be successful, students seeking jobs need skills that emphasize innovation and cultural competency as well as critical thinking, problem solving, communication, teamwork, ethical and social responsibility, and foundational skills like reading and basic math (Schuele & Madison, 2010). Holzer (2012) noted many graduates with degrees do not possess the sector-required skills to receive high wage jobs, placing the blame on disconnection between the labor market and the school systems. Indicators at the state, national, and international levels reported assessments in math and reading skills, high school graduation rates, college attendance, and employer surveys all state too many high school students are dropping out, and too many graduates are unprepared for college and/or employment (Wise, 2008).

Professionalism and work ethic, defined as "demonstrating personal accountability, effective work habits, e.g., punctuality, working productively with others, time and workload management" are rated "very important" for high school graduates' successful job performance by 80.3% of employer respondents (Casner-Lotto & Barrington, 2006, pg.23). Deficits employers find are entitlement attitude/unrealistic expectations, work ethic/laziness, lack of loyalty/commitment to company, work-life balance, immaturity, lack of confidence, understanding work required, communication skills, and need for instant gratification (Eisner, 2010).

Research by Gray and Herr (2006) showed 30% of high school graduates seeking employment were not provided the necessary skills in high school, which has resulted in high unemployment rates of high school graduates (Bureau of Labor Statistics, 2014). Research has shown skills such

as problem solving, effective communication, teamwork, critical thinking, and possessing interpersonal skills (Biling, 2003; Schmidt, 1999) are the employability skills most desired by employers. In the U. S. young adults suffer from a skills gap where they do not have the necessary competencies and work ethic to obtain employment (Easterly, et al., 2017).

Foundation skills including basic skills, thinking skills, and personal qualities along with workplace competencies are identified across many organizations as being fundamental requirements for new jobs (North & Worth, 2004). One study found 75% of long-term job success depends on people skills, while only 25% is dependent on technical knowledge (Klaus, 2010). Singh & Singh (2008) found employability skills are not job specific, but are applicable across all domains as well as all levels of employment.

Purpose and Objectives

The purpose of the study was to identify the desired employability skills needed by entry-level employees entering the profession in concentrated animal feeding operations (CAFOs) within the swine, dairy, and fed-beef industries. The following research questions were addressed in this study:

1. Determine the demographics (position of placement, number of employees supervised, formal education of employees) of individuals whom hire and manage people in CAFOs within the swine, dairy, and fed-beef industries.
2. Describe the level of preparation and importance of skills, knowledge, and abilities needed for employability which are desired in CAFOs within the swine, dairy, and fed-beef industries.
3. Analyze employers' perceptions of an entry-level employee's preparedness level in conjunction to importance of skills, knowledge and abilities needed for employability desired by CAFOs in the swine, dairy, and fed-beef industries.
4. Identify the value of life experiences and trainings as it applies to the preparation of individuals within the swine, dairy, and fed-beef industries.

Methodology

Research Design

This quantitative study was non-experimental and descriptive in nature. The study evaluated factors associated with identifying the preparedness and importance level of employable skills of entry-level employees within the swine, dairy, and fed-beef industries. The variables explored included interpersonal skills, communication skills, computer skills, and technical competencies. Two additional sections also evaluated life experiences and future trainings needed. Data pertaining to these variables were recorded in a descriptive questionnaire adapted from Graham (2001).

Population

The target population for the study consisted of CAFO corporate office managers, general managers, assistant general managers, and departmental managers who make hiring decisions and manage employees within a specific geographical area. Initially, 231 employers within the swine (n=6), dairy (n=108), and fed-beef industries (n=117) were identified by using contact information provided by a professional organization tied to each specific industry.

Snowball Sampling

To further grow the pool of data, additional participants with similar employment characteristics were recruited by using a snowball sampling technique. Heckathorn (2015) expressed snowball sampling, or chain-referral-sampling, of a hidden population begins with a convenience sample of initial subjects. One of the most important benefits of the snowball sampling technique is the possibility for the researchers to reference people in the questionnaire they would not have known by locating members of a specific population (Etikan, Alkassim, & Abubakar, 2015). This technique allows every recruited participant to recruit relevant subjects without requiring every participant to recruit subjects (Explorable, 2010).

Instrumentation

The instrument used in the study was adapted from Graham (2001). The instrument consisted of three sections to determine the employability skills needed by entry-level CAFO employees entering the profession of the swine, dairy, and fed-beef industries.

Section One measured the self-perceived preparedness and importance level of 31 employability skills within four categories: 1=interpersonal skills (13 items), 2=communication skills (4 items), 3=computer skills (3 items), 4=technical skills (11 items). Employers rated the entry-level employees on their preparedness level along with a perceived importance level in the four areas. The preparedness and importance levels were measured on a five-point, Likert-type response scale. The response scale used was: Importance scale (Real Limits): 1 = *Unimportant* (RL = 1.0-1.50), 2 = *Somewhat important* (RL = 1.51-2.50), 3 = *Important* (RL = 2.51-3.50), 4 = *Very important* (RL = 3.51-4.50), 5 = *Extremely important* (RL = 4.51-5.0). Preparedness scale (Real Limits): 1 = *Unprepared* (RL = 1.0-1.50), 2 = *Somewhat prepared* (RL = 1.51-2.50), 3 = *Prepared* (RL = 2.51-3.50), 4 = *Well prepared* (RL = 3.51-4.50), 5 = *Thoroughly prepared* (RL = 4.51-5.0).

Section Two of the questionnaire was comprised of six items, identified the importance of different life experiences for an entry-level employee. Section Three consisted of ranking the perceived importance level of eight employee trainings which may be needed for employee growth. Results were also entered in Microsoft Excel prior to being moved to Statistical Package for Social Sciences (SPSS) Version 24.0.

Validity and Reliability

Validity is defined as the ability of a questionnaire to measure what it purports to measure (Ary, Jacobs, Razavieh, & Sorenson, 2002). A panel of four university faculty, one Extension specialist, and three industry professionals reviewed the instrument to establish face and content validity within the questionnaire. The panel was used to gain insight as to clarity, readability, and appropriateness. The reliability for the questionnaire used in the study was adapted from Graham (2001). A Chronbach's alpha was used to calculate the internal consistency of the scaled items for this instrument at 0.93. Review of the survey instrument by the Institutional Review Board (IRB) at the University was required. The chairperson of the university's IRB approved research design and methods protocols before distribution and analyzation.

Data Collection

Elements of Dillman's Tailored Design Method (Dillman, Smyth, & Christian, 2014) were used to employ an optimal response. Prior to the questionnaire being administered, an introductory letter was sent to prospective participants explaining the purpose of the questionnaire, its importance, and the need for additional survey participants. Within the initial letter, all prospective participants were informed participation in the study was voluntary and anonymous. Approximately two weeks after the introductory letter went out, an email was sent including the link to the questionnaire. Two follow-up emails, as well as a paper letter, were sent out by the researcher. These letters thanked participants who had responded to the questionnaire instrument and encouraged non-respondents to participate in the study.

Data Analysis

Using the snowball sampling technique, a total of 83 participants completed the survey instrument. The number of responses within each industry comprised of 30 swine, 18 dairy, and 35 fed-beef operations. Data were analyzed using Statistical Package for Social Sciences (SPSS) Version 24.0. For the objectives of the study, frequencies, percentages, means, mean weighted discrepancy scores (MWDS), and standard deviations were used for descriptions and comparison of factors.

Borich (1980) noted the versatility of his model allows for modification and expansion. A discrepancy can be calculated by comparing the participants' behaviors, skills, and competencies, with the goals of the program: "a discrepancy analysis identifies the two polar positions of what is and what should be" (Borich, 1980, p. 39). To determine the perceived level of importance of the employability skills needed in industry and the perceived level of competence at performing the skills, discrepancy scores were taken from the data on the employability skill constructs. The employability skill constructs were ranked from high to low to determine the greatest discrepancies, which would signify where the curriculum should be enhanced. A discrepancy score for each employability skill construct was calculated by taking the mean importance rating minus the mean preparedness rating. A weighted discrepancy score was then calculated for every employability skill by multiplying the discrepancy score by the mean importance rating. A mean weighted discrepancy score for each of the employability skills was then calculated by taking the sum of the weighted discrepancy scores, divided by the number of respondents (*swine, n=30 ; dairy, n=18 ; fed-beef, n=35*). The employability skill constructs were then ranked, from high to low; using the mean weighted discrepancy scores. Items with a high discrepancy score indicated areas needed for enhancement and improvement toward educational and training efforts.

Findings

Objective One

In objective one, respondents were asked to identify the size and capacity of workforce within each of their respected industries. Being able to identify the demographics of each industry, the data collected can give an insight about the position of the respondent relative to their job title, the number of people each respondent supervised, and the level of formal education by majority of their employees. The highest percentage of respondents in the swine industry reported consisted of department managers *(n* = 18) with a rate of 60%. The highest percentage of respondents in both the dairy and fed-beef industries identified were general managers; dairy *(n* = 14) with a rate of 77.78%, and fed-beef *(n*=22) with a rate of 64.71%.

Most of the respondents in the swine industry selected they most often supervise six to ten employees (*n* =8, 26.67%). Whereas both, the dairy industry (*n* =7, 38.89%) and fed-beef industry (*n* =11, 32.35%) selected they tend to supervise twenty-six to fifty employees. All respondents within the swine (*n*=16, 31.37%), dairy (*n*=11, 36.67%), and fed-beef (*n*=26, 45.61%) industries reported a high school diploma as their traditional employees' highest level of education.

Objective Two

In objective two, respondents were asked to evaluate the perceived preparedness level of their employees as well as identify the importance level of 31 employability skills in CAFOs. In the swine industry, thirteen skills were indicated as employees were *Prepared* (RL = 2.51-3.50) and eighteen skills were identified as *Somewhat Prepared* (RL = 1.51-2.50). The top five items ranked as *Prepared* consisted of 'Honesty/ Integrity' *(M*=3.27, *SD*=0.96), 'Working Well with Fellow Employees' *(M*=3.07, *SD*=0.96), 'Maintaining a Positive Attitude' *(M*=2.97, *SD*=0.84), 'Dependability/Dedication to the Job' *(M*=2.93, *SD*=1.08), and 'Understand and Follow Instructions' *(M*=2.72, *SD*=0.94). When evaluating importance, two items were identified as *Extremely Important* (RL = 4.51-5.00). These two skills were 'Honesty/ Integrity' *(M*=4.63, *SD*=0.55) and 'Animal Management/Animal Welfare' *(M*=4.57, *SD*=0.76). Eighteen skills were identified as *Very Important* (RL = 3.51-4.50), nine skills were identified as *Important* (RL = 2.51-3.50), and two skills were identified as *Somewhat Important* (RL = 1.51-2.50). The top three skills ranked as *Very Important* consisted of 'Understand and Follow Instructions' *(M*=4.48, *SD*=0.56), 'Dependability/Dedication to the Job' *(M*=4.38, *SD*=0.67), and 'Proper Safety Procedures' *(M*=4.37, *SD*=1.02).

In the dairy industry, seven skills indicated employees were *Prepared* (RL = 2.51-3.50) and twenty-two skills were identified as *Somewhat Prepared* (RL = 1.51-2.50). Two skills were identified as Unprepared (RL=1.00-1.50). The top five items were ranked as *Prepared* consisted of 'Maintaining a Positive Attitude' *(M*=3.17, *SD*=0.90), 'Honesty/ Integrity' *(M*=3.06, *SD*=0.97), 'Understand and Follow Instructions' *(M*=2.83, *SD*=0.83), 'Working Well with Fellow Employees' *(M*=2.61, *SD*=0.83), and 'Open-minded to new experiences or ideas' *(M*=2.72, *SD*=0.94). The two skills were identified as *Unprepared* were 'Business Comprehension' *(M*=1.39, *SD*=0.59) and 'Marketing Comprehension' *(M*=1.39, *SD*=0.59). When evaluating importance, one skill was identified as *Extremely Important* (RL = 4.51-5.00). This skill was 'Honesty/ Integrity' *(M*=4.83, *SD*=0.37). Eighteen skills were identified as *Very Important* (RL = 3.51-4.50), ten skills were identified as *Important* (RL = 2.51-3.50), and two skills were identified as *Somewhat Important* (RL = 1.51-2.50). The top four skills ranked as *Very Important* consisted of 'Livestock Handling Procedures' *(M*=4.50, *SD*=0.83), 'Dependability/Dedication to the Job' *(M*=4.50, *SD*=0.69), 'Understand and Follow Instructions' *(M*=4.50, *SD*=0.60), and 'Proper Safety Procedures' *(M*=4.44, *SD*=0.76).

In the fed-beef industry, nineteen skills indicated employees were *Prepared* (RL = 2.51-3.50) and twelve skills were identified as *Somewhat Prepared* (RL = 1.51-2.50). The top five items in which were ranked as *Prepared* consisted of 'Honesty/ Integrity' *(M*=3.37, *SD*=1.02) 'Working Well with Fellow Employees' *(M*=3.23, *SD*=0.96), 'Open-minded to new experiences or ideas' *(M*=3.14, *SD*=1.10), 'Dependability/Dedication to the Job' *(M*=2.97, *SD*=1.18), 'Initiative'

(M=2.94, *SD*=1.01). When evaluating importance, one skill was identified as *Extremely Important* (RL = 4.51-5.00). This skill was 'Honesty/ Integrity' *(M*=4.82, *SD*=0.38). Seventeen skills were identified as *Very Important* (RL = 3.51-4.50) and thirteen skills were identified as *Important* (RL = 2.51-3.50). The top four skills ranked as *Very Important* consisted of 'Dependability/Dedication to the Job' *(M*=4.38, *SD*=0.80), 'Working Well with Fellow Employees' *(M*=4.34, *SD*=0.86), 'Understand and Follow Instructions' *(M*=4.26, *SD*=0.77), and 'Proper Safety Procedures' *(M*=4.24, *SD*=0.94).

Objective Three

The purpose of objective three was to analyze employers' perceptions of an entry-level employee's preparedness level in conjunction to importance of skills, knowledge and abilities needed for employability desired by CAFOs in the swine, dairy, and fed-beef industries. To accomplish this, the Borich (1980) needs assessment model was used for assessment. The largest MWDS scores indicated the greatest need for educational training development as perceived by the swine industry (Table 1). In the swine industry, the skills containing the greatest mean weighted discrepancy scores were 'Animal Management/Animal Welfare' (MWDS=8.92), 'Setting Priorities' (*MWDS*=7.92), 'Understand and Follow Instructions' (*MWDS*=7.88), 'Proper Safety Procedures' (*MWDS*=7.86), 'Animal Health' (*MWDS*=7.56), and 'Animal Health' (*MWDS*=7.56). The skills containing the lowest mean weighted discrepancy scores were 'Marketing Comprehension' (*MWDS*=2.58), 'Technical Writing' (*MWDS*=2.51), 'Yard Maintenance/Welding (*MWDS*=1.30), and 'Vehicle & Heavy Equipment Operation/Maintenance/Mechanics' (*MWDS*=1.12).

Table 1
Overall Mean Weighted Discrepancy Scores for Employable Skills in the Swine Industry (n=31)

Skills Needed	Category	Importance		Preparedness		
		M	*SD*	*M*	*SD*	(*MWDS*)
Animal Management/Animal Welfare	4	4.57	0.76	2.70	1.24	8.52
Setting Priorities	1	4.17	0.73	2.27	1.00	7.92
Understand and Follow Instructions	2	4.48	0.56	2.72	0.94	7.88
Proper Safety Procedures	4	4.37	1.02	2.57	1.15	7.86
Animal Health	4	4.20	0.91	2.40	1.23	7.56
Decision Making/Problem Solving	1	4.10	0.91	2.30	1.00	7.38
Livestock Handling Procedures	4	4.33	0.79	2.63	1.22	7.37
Initiative	1	4.21	0.67	2.47	1.06	7.36
Dependability/Dedication to the Job	1	4.38	0.67	2.93	1.08	6.34
Honesty/Integrity	1	4.63	0.55	3.27	0.96	6.33
Record Keeping	4	3.93	0.94	2.43	0.84	5.89
Animal Feeding/Nutrition	4	3.83	1.24	2.30	1.24	5.88
Possess a desire to see the business be successful	1	3.97	0.71	2.53	1.20	5.69

Working Well with Fellow Employees	1	4.33	0.65	3.07	0.96	5.49
Organizational skills	1	3.80	0.79	2.37	0.80	5.45
Professionalism	1	3.83	0.78	2.60	1.08	4.73
Open-minded to new experiences or ideas	1	3.87	0.81	2.67	0.83	4.64
Ability to Work Independently	1	3.80	0.87	2.63	1.08	4.43
Ability to Speak a Second Language	2	2.93	1.12	1.80	0.83	4.21
Management/Overseeing several tasks at once	1	3.57	0.84	2.40	1.20	4.16
Computer Control Systems	3	3.17	1.18	1.93	0.74	3.94
Maintaining a Positive Attitude	1	3.90	0.80	2.97	0.84	3.62
Business Comprehension	4	3.13	1.06	2.00	1.03	3.55
Computerized Record Systems	3	3.17	1.07	2.13	0.72	3.27
Spreadsheets/Word Processing	3	3.00	1.05	1.93	0.81	3.20
Feed Production/Processing/Management	4	2.90	1.25	1.80	0.98	3.19
Indulging/Responding to Others Comments during Conversation	2	3.45	0.56	2.55	0.67	3.09
Marketing Comprehension	4	2.67	1.16	1.70	0.94	2.58
Technical Writing	2	3.03	1.00	2.21	0.85	2.51
Yard Maintenance/Welding	4	2.17	1.19	1.57	0.84	1.30
Vehicle & Heavy Equipment Operation/Maintenance/Mechanics	4	2.21	1.16	1.70	0.94	1.12

Note. Categories (1 = *interpersonal skills*; 2 = *communication skills*; 3 = *computer skills*; 4 = *technical skills*); Importance scale (Real Limits): 1 = *Unimportant* (RL = 1.0-1.50), 2 = *Somewhat important* (RL = 1.51-2.50), 3 = *Important* (RL = 2.51-3.50), 4 = *Very important* (RL = 3.51-4.50), 5 = *Extremely important* (RL = 4.51-5.0). *Preparedness scale* (Real Limits): 1 = *Unprepared* (RL = 1.0-1.50), 2 = *Somewhat prepared* (RL = 1.51-2.50), 3 = *Prepared* (RL = 2.51-3.50), 4 = *Well prepared* (RL = 3.51-4.50), 5 = *Thoroughly prepared* (RL = 4.51-5.0). MWDS =Mean Weighted Discrepancy Score.

The largest MWDS scores indicated the greatest need for enhanced education and training as perceived by the dairy industry (Table 2). The skills containing the greatest mean weighted discrepancy scores were 'Livestock Handling Procedures' (*MWDS*=9.75), 'Dependability/Dedication to the Job' (*MWDS*=9.25), 'Proper Safety Procedures' (*MWDS*=8.89), 'Honesty/Integrity' (*MWDS*=8.59), and 'Animal Management/Animal Welfare' (*MWDS*=8.05), and 'Initiative' (*MWDS*=7.74). The skills containing the lowest mean weighted discrepancy scores were 'Yard Maintenance/Welding' (*MWDS*=2.83), 'Technical Writing' (*MWDS*=2.59), 'Spreadsheets/Word Processing' (*MWDS*=1.25), and 'Marketing Comprehension' (*MWDS*=1.08).

Table 2

Overall Mean Weighted Discrepancy Scores for Employable Skills in the Dairy Industry (n=31)

Interpersonal Skills Needed	Category	Importance		Preparedness		(*MWDS*)
		M	*SD*	*M*	*SD*	
Livestock Handling Procedures	4	4.50	0.83	2.33	1.15	9.75
Dependability/Dedication to the Job	1	4.50	0.69	2.44	1.26	9.25
Proper Safety Procedures	4	4.44	0.76	2.44	1.12	8.89
Honesty/Integrity	1	4.83	0.37	3.06	0.97	8.59
Animal Management/Animal Welfare	4	4.39	0.68	2.56	1.17	8.05
Initiative	1	4.22	0.92	2.39	1.06	7.74
Animal Health	4	4.11	0.87	2.28	0.93	7.54
Understand and Follow Instructions	2	4.50	0.60	2.83	0.83	7.50
Possess a desire to see the business be successful	1	4.22	1.13	2.50	1.12	7.27
Working Well with Fellow Employees	1	4.33	0.94	2.72	0.93	6.98
Decision Making/Problem Solving	1	3.61	1.06	1.78	0.92	6.62
Management/Overseeing several tasks at once	1	3.67	1.29	2.00	0.88	6.11
Organizational skills	1	3.67	1.00	2.06	0.87	5.90
Animal Feeding/Nutrition	4	3.39	1.11	1.72	0.73	5.65
Record Keeping	4	3.67	1.25	2.22	0.97	5.30
Ability to Speak a Second Language	2	3.44	1.21	1.89	0.87	5.07
Vehicle & Heavy Equipment Operation/Maintenance/Mechanics	4	3.61	0.95	2.22	0.79	5.02
Setting Priorities	1	3.67	1.05	2.33	1.00	4.89
Professionalism	1	3.56	1.01	2.28	0.93	4.54
Maintaining a Positive Attitude	1	4.17	0.83	3.17	0.90	4.17
Feed Production/Processing/Management	4	3.00	1.11	1.61	0.76	4.17
Indulging/Responding to Others Comments during Conversation	2	3.39	1.16	2.33	0.88	3.58
Computerized Record Systems	3	3.00	1.24	1.82	0.98	3.53
Ability to Work Independently	1	3.33	0.94	2.28	0.99	3.52
Business Comprehension	4	2.67	1.15	1.39	0.59	3.41
Open-minded to new experiences or ideas	1	3.56	0.90	2.61	0.83	3.36
Computer Control Systems	3	2.82	1.29	1.65	0.90	3.32
Yard Maintenance/Welding	4	3.00	1.20	2.06	0.62	2.83

Technical Writing	2	2.59	1.37	1.59	0.69	2.59
Spreadsheets/Word Processing	3	2.12	1.08	1.53	0.92	1.25
Marketing Comprehension	4	1.94	1.13	1.39	0.59	1.08

Note. Categories (1 = *interpersonal skills*; 2 = *communication skills*; 3 = *computer skills*; 4 = *technical skills*); Importance scale (Real Limits): 1 = *Unimportant* (RL = 1.0-1.50), 2 = *Somewhat important* (RL = 1.51-2.50), 3 = *Important* (RL = 2.51-3.50), 4 = *Very important* (RL = 3.51-4.50), 5 = *Extremely important* (RL = 4.51-5.0). *Preparedness scale* (Real Limits): 1 = *Unprepared* (RL = 1.0-1.50), 2 = *Somewhat prepared* (RL = 1.51-2.50), 3 = *Prepared* (RL = 2.51-3.50), 4 = *Well prepared* (RL = 3.51-4.50), 5 = *Thoroughly prepared* (RL = 4.51-5.0). MWDS =Mean Weighted Discrepancy Score.

The largest MWDS scores indicated the greatest need for educational training development as perceived by the fed-beef industry (Table 3). The skills containing the greatest mean weighted discrepancy scores were 'Honesty/Integrity' (*MWDS*=7.00), 'Proper Safety Procedures' (*MWDS*=6.48), 'Dependability/Dedication to the Job' (*MWDS*=6.19), 'Animal Management/Animal Welfare' (*MWDS*=6.10), 'Livestock Handling Procedures' (*MWDS*=6.01), and 'Understand and Follow Instructions' (*MWDS*=5.72). The skills containing the lowest mean weighted discrepancy scores were 'Spreadsheets/Word Processing' (*MWDS*=1.96), 'Marketing Comprehension' (*MWDS*=1.91), 'Technical Writing' (*MWDS*=1.60), and 'Open-minded to new experiences or ideas' (*MWDS*=1.20).

Table 3
Overall Mean Weighted Discrepancy Scores for Employable Skills in the Fed Beef Industry (n=31)

Interpersonal Skills Needed	Category	Importance		Preparedness		
		M	*SD*	*M*	*SD*	(*MWDS*)
Honesty/Integrity	1	4.82	0.38	3.37	1.02	7.00
Proper Safety Procedures	4	4.24	0.94	2.71	0.99	6.48
Dependability/Dedication to the Job	1	4.38	0.80	2.97	1.18	6.19
Animal Management/Animal Welfare	4	4.15	0.97	2.68	1.08	6.10
Livestock Handling Procedures	4	4.09	0.92	2.62	0.97	6.01
Understand and Follow Instructions	2	4.26	0.77	2.91	0.97	5.72
Decision Making/Problem Solving	1	3.80	0.82	2.40	1.05	5.32
Record Keeping	4	3.77	1.04	2.43	0.96	5.06
Ability to Work Independently	1	3.89	0.78	2.63	0.90	4.88
Possess a desire to see the business be successful	1	4.03	0.86	2.83	1.25	4.84
Working Well with Fellow Employees	1	4.34	0.86	3.23	0.96	4.84
Initiative	1	4.11	0.71	2.94	1.01	4.82
Animal Health	4	3.79	1.09	2.53	1.01	4.77
Feed Production/Processing/Management	4	3.65	1.13	2.35	1.16	4.72

Setting Priorities	1	3.74	0.91	2.49	1.05	4.71
Animal Feeding/Nutrition	4	3.53	1.01	2.35	1.00	4.15
Organizational skills	1	3.66	0.86	2.53	0.98	4.12
Maintaining a Positive Attitude	1	3.89	0.85	2.91	0.84	3.77
Management/Overseeing several tasks at once	1	3.50	0.88	2.57	1.18	3.25
Vehicle & Heavy Equipment Operation/Maintenance/Mechanics	4	3.44	1.14	2.50	0.92	3.24
Business Comprehension	4	3.15	1.09	2.15	0.91	3.15
Indulging/Responding to Others Comments during Conversation	2	3.50	0.92	2.62	0.84	3.09
Ability to Speak a Second Language	2	3.03	1.03	2.09	0.97	2.86
Computer Control Systems	3	3.40	0.93	2.57	0.99	2.82
Computerized Record Systems	3	3.40	1.05	2.63	1.02	2.62
Yard Maintenance/Welding	4	3.26	1.12	2.47	0.95	2.59
Professionalism	1	3.46	1.10	2.74	1.02	2.47
Spreadsheets/Word Processing	3	3.11	1.06	2.49	1.18	1.96
Marketing Comprehension	4	2.71	1.23	2.00	0.97	1.91
Technical Writing	2	2.54	0.97	1.91	1.05	1.60
Open-minded to new experiences or ideas	1	3.49	0.94	3.14	1.10	1.20

Note. Categories (1 = *interpersonal skills*; 2 = *communication skills*; 3 = *computer skills*; 4 = *technical skills*); Importance scale (Real Limits): 1 = *Unimportant* (RL = 1.0-1.50), 2 = *Somewhat important* (RL = 1.51-2.50), 3 = *Important* (RL = 2.51-3.50), 4 = *Very important* (RL = 3.51-4.50), 5 = *Extremely important* (RL = 4.51-5.0). *Preparedness scale* (Real Limits): 1 = *Unprepared* (RL = 1.0-1.50), 2 = *Somewhat prepared* (RL = 1.51-2.50), 3 = *Prepared* (RL = 2.51-3.50), 4 = *Well prepared* (RL = 3.51-4.50), 5 = *Thoroughly prepared* (RL = 4.51-5.0). MWDS =Mean Weighted Discrepancy Score.

Objective Four

The purpose of objective four was to identify the value of life experiences and trainings as it applies to the preparation of individuals within the swine, dairy, and fed-beef industries. The top three life experiences which respondents in the swine industry identified as most important were 'General work experience/manual labor' *(M*=3.43, *SD*=1.02), 'Farm and/or Ranch Experience' *(M*=2.93, *SD*=1.03), and 'Career-related employment' *(M*=2.87, *SD*=0.92). The top three most needed trainings as identified in the swine industry were 'Animal Management/Animal Welfare' *(M*=3.00, *SD*=1.41), 'Proper Safety Procedures' *(M*=3.54, *SD*=2.23), and 'Animal Health' *(M*=3.86, *SD*=1.55) indicating the largest need for better preparation of their employees.

The top three life experiences which respondents in the dairy industry identified as most important were 'General work experience/manual labor' *(M*=3.39, *SD*=1.01), 'Farm and/or Ranch Experience' *(M*=3.17, *SD*=1.12), and 'Career-related employment' *(M*=2.83, *SD*=1.21). The top three most needed trainings as identified in the dairy industry were 'Animal

Management/Animal Welfare' *(M*=2.50, *SD*=1.21), 'Animal Health' *(M*=3.00, *SD*=1.33), and 'Livestock Handling Procedures' *(M*=3.78, *SD*=2.15) indicating the largest need for better preparation of their employees.

The top three life experiences respondents in the fed-beef industry identified as most important were 'General work experience/manual labor' *(M*=4.00, *SD*=0.77), 'Career-related employment' *(M*=3.44, *SD*=1.01), and 'Farm and/or Ranch Experience' *(M*=3.18, *SD*=1.01). The top three most needed trainings as identified in the fed-beef industry were 'Animal Management/Animal Welfare' *(M*=3.34, *SD*=1.93), 'Proper Safety Procedures' *(M*=3.83, *SD*=2.48), and 'Livestock Handling Procedures' *(M*=4.03, *SD*=1.81) indicating the largest need for better preparation of their employees.

Conclusions

About one-third of all high school graduates do not got to college, but immediately go to work (Gray, 2004). A recurring theme from agricultural employers is their difficulty in recruiting professionals particularly for rural postings (Pratley, 2008). Since human capital is more valuable than resources such as land, labor, and other assets, it is vital to help individuals develop the skills specific to their sector (Maiga, Cartmell, Edwards, & Robinson, 2013; Zubović, Domazet, & Stošić, 2009).

CTE provides all students educational opportunities, equipping them for the dramatic transition from high school to postsecondary education and career options (Brewer, 2004). Unfortunately, there is no definite way of knowing which of the thirty-three percent of graduates going into the workforce are taking some type of CTE course. However, it is evident employability is a large factor in the CAFOs in the Texas High Plains and surrounding counties. Corporate trainers are implementing in house trainings which teach how to read people, draw out clients, and build relationships: skill-oriented executive education fill in the holes of their employees' formal education (Klaus, 2010).

When describing objective one, the highest percentage of respondents from the swine industry were Departmental Mangers (60%), whereas the highest percentage of respondents from both the dairy and fed-beef industry were General Managers (dairy=78%, and fed-beef=65%). Respondents from the swine industry typically supervised 6 to 10 employees, whereas the dairy and fed-beef industries indicated they generally supervised 26 to 50 employees on a daily basis. All three industries unanimously indicated a majority of the employees they supervise carried a high school diploma as their highest level of education.

Objective two observed the preparedness and importance level of employees with in each of the three CAFO industries. For the category of interpersonal skills, all three industries deemed 'Honesty/Integrity' and 'Working Well with Fellow Employees' as the most prepared among their employees. 'Maintaining a Positive Attitude' and 'Dependability/ Dedication to the Job' followed closely among the industries. Within the category of communication skills, all three industries deemed 'Understand and Follow Instructions' and 'Indulging/Responding to Others Comments during Conversation' as prepared. In the category of computer skills, all industries marked their employees as somewhat prepared for the three skills. In the category of technical

skills, all three industries deemed 'Animal Management/Animal Welfare' and 'Livestock Handling Procedures' and 'Proper Safety Procedures' as the most prepared skills.

When observing the importance level of each industry's employees, interestingly enough, all three industries deemed the same skills in each category as the most important. For interpersonal, those skills were 'Honesty/Integrity', and 'Dependability/Dedication to the Job'. In communication, the most important skill among all industries as indicated by respondents was 'Understand and Follow Instructions'. In the way of computer skills, they were 'Computerized Record Systems' and Computer Control Systems'. Lastly, the skills deemed most important for technical skills were 'Animal Management/Animal Welfare', 'Proper Safety Procedures', and 'Livestock Handling Procedures'.

Objective three observed 31 skills and an analysis between preparation levels and importance of the skills were identified by a mean weighted discrepancy score (MWDS). Within each industry, the greatest value of mean weighted discrepancy scores identified the greatest potential need for enhanced education and/or training. The dairy and fed-beef industries contained the same top five skills showing the greatest need for enhanced education and/or training within each respective industry. Although very similar to dairy and fed-beef, the swine industry differed in two skills needed such as 'Setting Priorities' and 'Animal Health' possessed higher MWDS's.

Objective four identified the value of life experiences and trainings as it applies to the preparation of individuals within the swine, dairy, and fed-beef industries. All three industries valued 'General Work Experience/Manual Labor' as the most valuable experiential learning which employees could acquire. The trainings all industries unanimously identified as the most required area of need was 'Animal Management/Animal Welfare'. Both the swine and fed-beef industries valued 'Proper Safety Procedures' as the next important training, whereas the dairy industry valued 'Animal Health' as second.

Implications

Holzer (2012) emphasized the deficit of skilled workers and suggested education and skill trainings of prospective employees fail to keep pace with employer needs. Over 40% of employers rate new entrants with a high school diploma as "deficient" in their general preparation for entry-level jobs (Casner-Lotto & Barrington, 2006). Employers in this study identified the highest formal education level by majority of their employees was a high school level education. These percentages were represented in swine at 31.37%, dairy at 36.37%, and fed-beef at 45.61%. This indicated the majority of employees throughout the CAFO workforce in the study graduated from a high school setting and began working in one of the three industries.

Professionals should be reminded, education and knowledge does not just include technical skills, but personal attributes such as honesty/integrity, working well with fellow employees, and maintaining a positive attitude are considered just as important. All industries referenced 'Honesty/Integrity' as an important skill, if not the greatest skill, identified. Industry is in need of employees who are trustworthy, follow moral principles, and practice good character. The characteristics of 'Honesty/Integrity' may not always be taught or trained directly, but can be modeled and demonstrated by others in order to develop a desired culture throughout the industry. Recommendations were made for all stakeholders to encourage character instruction

along with leadership and communication skills (Williams, Robertson, Kieth, & Deal, 2014). Industry stakeholders can implement, model, and practice these characteristics to support and encourage honesty and integrity in the workplace on a daily basis.

A valued skill which employers throughout CAFO industries also desired among their employees was 'Dependability/Dedication to the Job'. Employer's desire employees who show reliability and dependability to the industry not only to do the right thing (integrity), but accomplish the goals of the enterprise in a timely manner. Abilities for goal setting, employee buy-in, and leadership guidance are factors which contribute to the ability of an employee being dependable and/or dedicated to any industry.

Among all industries, a skill following 'Honesty/Integrity' in importance, and had one of the largest mean weighed discrepancy scores throughout the CAFO's studied was the need for 'Animal Management/Animal Welfare'. This indicated the employers in all industries of the CAFOs desired their employees were correctly trained on how to properly manage animals of a particular species and an animal's well-being takes priority. The safety and humane treatment of all animal species is of the upmost importance to any CAFO.

Two closely related trainings were observed as needs for all industries. These were proper 'Livestock Handling Procedures' and 'Proper Safety Procedures'. Education and trainings of workplace safety procedures are crucial to the protection and the wellbeing of both industry employees and the animals they care for. Many CAFO industries have implemented safety reward programs allowing employees to earn monetary benefits every quarter if all safety procedures who have been followed and there have not been any reported accidents on the premises. Simmons-McDonald (2009) stated lifelong learning is a critical factor in the employability of an individual. Many students can develop these skills desired in entry-level positions by acquiring employment through general work placement programs, internships, or on-the-job trainings.

Recommendations

The study above provided baseline data in regard to the perception of employers in the swine, dairy, and fed-beef industries who manage people a daily basis on the preparedness level of their employees. The study was within a specific geographical area. To further grow the pool of data within each industry, participants throughout each identified enterprise were asked to send the questionnaire to employees within specific enterprise with similar employment characteristics by using a snowball sampling technique. Caution should be applied in interpretation of results and generalities of the study should not occur.

Overall, employees in the swine, dairy, and fed-beef industries seem to be prepared in the workforce. However, room for improved curriculum, education, and trainings at the secondary and post-secondary levels will always have a need in order to educate the future workforce. The results of the study should be shared with graduates, undergraduates, and high school age students prior to entering any type of scholastic/academic programs and/or job workforce training. Furthermore, the results from the study should be shared with CTE administrators, educators, and relevant stakeholders in order to improve curriculum to better prepare the future's workforce. It is vital for university professors who develop program requirements and

coursework to remain up-to-date with the current demands of the workforce and integrate feedback from students, researchers, practitioners, and the community (Hurst et al., 2015; Maiga et al., 2013).

Educational institutions, particularly those with CTE programs, have an advantageous opportunity to develop a rigorous curriculum which can be implemented in order to enhance a student's ability to be successful in an industry workplace. Due to the level of importance of skills being so evident, faculty members at the secondary and post-secondary levels should look for curriculum opportunities to enhance interpersonal development to their students. The variables educators should keep in mind when developing a rigorous curriculum are the ranked items according to each industries' mean weighted discrepancy scores. These items included setting priorities, dedication to the job, honesty and integrity within all the industries, along with proper safety procedures, livestock handling procedures, and animal management/animal welfare.

As mentioned above, secondary school institutions should take into consideration the qualities and characteristics CAFO industry employers desire in their employees. These items can help develop, transform, and invigorate workforce programs already working with a career readiness platform. Along with leadership training in the curriculum, secondary institution leaders can work with local businesses and/or industry associations pertaining to CAFOs in their area. These industry partnerships can help develop programs of interests allowing secondary students to be participants of industry designed educational programs. Educational institutions should develop programs and trainings which students are able to participate in real life applications which are relevant with industry needs. Some are advocating the competence of a new workforce entrant should be certified by credentials, separate form educational degrees, when earned, validate the prospective employee's relevant qualifications (Eisner, 2010).

A majority of the employees entering the CAFO workforce are perceived as somewhat prepared in many of the qualifying skills needed for the job, however, many industries are performing on-the-job training to enhance these skills. Employers are looking for trainable recruits who may be trained in a particular industry and not necessarily trained employees (Maclean & Ordonez, 2007). Therefore, CAFOs in the [STATE REGIION] and surrounding areas are having to train employees for the jobs needed. Employers should explore potential workshops at annual conferences or other educational engagements which can help provide information on how to implement these skills to their employees.

A similar study should be replicated with a focus toward employers in other geographical areas in an effort to uncover any additional knowledge toward what skills are needed by entry-level employees in the workplace. A more in-depth research with employers should be performed to add to the pool of data. In addition, a study with swine, dairy, and fed-beef industry employees on self-perceived preparedness relative to the skills provided should be administered. As mentioned, the more which is known about competencies needed in agriculture careers and is incorporated into curriculum development, the more employable agriculture graduates will be in the marketplace (Graham, 2001). Additionally, a study with newly hired swine, dairy, and fed-beef industry employees should be conducted to analyze their own self-perceived preparation level relative to their new career. Furthermore, a qualitative research study such as one on one

interviews and focus groups throughout each swine, dairy, and fed-beef industry should be considered as to gather specific skills and traits needed from employees. A qualitative study within each industry would determine and clarify some of the specific needs, qualities, and characteristics which make up a skilled employee.

Finally, it is recommended the results of the study be shared with future students, as well as the faculty of secondary and post-secondary institutions, in an effort to identify the skills needed in the current workplace. Furthermore, educational institutions should continue to collaborate with swine, dairy, and fed-beef industry professionals in an effort to equip future graduates (secondary and/or post-secondary) with the appropriate skills needed for success in the industry workplace.

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