

What to Teach Future Commodity Merchandisers: A Survey of Skills and Needs

**Brandon J. Kliethermes¹, Joe L. Parcell²,
and Jason R.V. Franken³**
**University of Missouri
Columbia, MO**



Abstract

Little information exists on grain merchandisers, their demographic and professional characteristics, or the skills they find necessary to be successful. Our research contributes toward filling this gap and helps teachers in agricultural economics and agribusiness prepare students for a career as a grain merchandiser. A summary of survey responses from 230 experienced grain merchandisers quantifies personal characteristics, skills perceived as important, and desire for further training. Higher income, education, and training levels are associated with a greater perceived importance of hedging and this view of hedging is related to a greater desire to improve understanding of basis and spreads, suggesting that these skills should be emphasized in the classroom. More educated merchandisers and those overseeing multiple locations place greater value on logistics. More experienced merchandisers have less desire to improve their understanding of futures markets, possibly because adequate skills were learned on the job over time or perhaps due to impending retirement.

Introduction

“What will our students do upon graduation? It is amazing to me that we have been so successful as an academic profession and yet have paid so little attention to this question” (Padberg, 1987).

A number of college of agriculture graduates pursue commodity merchandising careers. As professionals, merchandisers are charged with the task of generating profit by organizing the purchase, sale, and transport (and/or other transformation) of a commodity across particular locations for specified dates and prices. The process entails coordinating logistics, accounting for transaction costs, managing price risk, and managing the margin across time or space. Commodity merchandising also requires the use of soft skills, such as communicating with clientele, solving day to day organizational problems, utilizing sales tactics, and working within a team. With many opportunities for students to pursue a commodity merchandising career, a better under-

standing of the emerging and evolving skill sets needed for successful grain merchandising will assist teachers in preparing students for this field. The objective of this research is to report on respondent feedback from a mail survey of grain merchandisers, regarding skill-sets used on the job, access to information content found useful, educational experiences, and interest in professional development opportunities. With only one educational article addressing futures market risk management skills pertinent to grain merchandisers in over a decade (i.e., Parcell and Franken, 2009) and increasing commodity price volatility (Mckenzie, 2008), an assessment of skills desirable for this profession is warranted.

Similar surveys of students, alumni, employers, or other industry specialists have been used to rate education quality and inform curriculum development in colleges of agriculture (e.g., Larke et al., 1985; Harris, 1989; Trinklein and Wells, 1989; Barkley, 1991; Cole and Fanno, 2000; Cole and Thompson, 2002; Karsten and Risius, 2004; Parcell and Sykuta, 2005; Robinson et al., 2007; Denniston and Russel, 2007; Ewing, 2009; Robinson, 2009). While the importance of some skills (e.g., oral and written communication skills) spans nearly all degree programs (c.f., Cole and Thompson, 2002; Karsten and Risius, 2004; Schlee and Harich, 2010), this survey identifies skills of particular importance to grain merchandisers.

Consistent with the old adage, “Tell me and I’ll forget. Show me and I’ll learn. Involve me and I’ll understand” (Gentry, 1990, p. 9), there exists ample evidence that students’ comprehension and retention is enhanced with experiential-based learning. Battisti et al. (2008) chronicle the history of experiential learning and applications to agricultural education. Gosen and Washbush (2004) review outcomes from alternative experiential learning methods, noting that several of these methods enhance economic learning. Rogers (1969) who early on stressed the value of experiential learning notes that students learn best when students (1) are involved and have control over the need to learn, (2) directly confront real-world problems, and (3) are

¹Brandon Kliethermes is a Senior Economist in the Agriculture Sector of IHS Global Insights and former Graduate Research Assistant and MS recipient in the Department of Agricultural and Applied Economics, University of Missouri.

²Associate Professor, Department of Agricultural and Applied Economics, University of Missouri; Phone: 573-882-0870; Fax: 573-884-6572; Email: parcellj@missouri.edu.

³Post-Doctoral Fellow, Department of Agricultural and Applied Economics, University of Missouri; Email: frankenj@missouri.edu.

What to Teach

allowed to self-evaluate. Schroeder et al. (1995) and Parcell and Franken (2009) offer examples of experiential learning through a course operating a student-invested futures contract trading pool, which addresses some of the skills identified as important by respondents to our survey. Earlier work has covered simulation techniques for teaching these skills, noting difficulties in conveying the information through traditional lectures and readings (e.g., O'Rourke, 1973; Hudson et al., 1989; Hamm et al., 1991; Drinka and York, 1992; Dahlgran, 1993). It is hoped that this paper sparks further discussion and generation of experiential-based coursework aimed at serving the educational needs of (current and future) grain merchandisers.

During the last several decades, agriculture market research has focused heavily on the producer. Academics have created extension programs to educate and certify producers and help update their practices. Surveys have been conducted to determine what strategies producers utilize for marketing their grain (Mishra et al., 1999; Pennings et al., 2004) and what tools they use in the commodity futures and options markets (Schroeder et al., 1998; Davis and Patrick, 2000).

Commodity merchandisers' role in orchestrating the movement of a commodity from producer to end user has been, as Schrimper (2001) explains, a key value adding component. It is the merchandiser's role to find logistical outlets that will accomplish this goal, and by doing so, reliable markets are created that allow businesses to make informed decisions (Schrimper, 2001).

The last study addressing the educational needs of commodity merchandisers was a survey of 20 grain elevator managers in east central Illinois conducted in the mid-1960s (i.e., Fiscus, 1965). In this context, the duties of elevator managers closely resembled the duties of today's grain merchandisers. In Fiscus (1965), elevator managers on average had 12.1 years of education, managed elevators for 9.9 years, and worked in some aspect of the grain handling business for 18.2 years with at least 8.3 years of experience before becoming a manager. Overall, managers placed great importance on business practices within their daily activities such as: 1) Understanding the types and processes of crop marketing; 2) Understanding economic factors affecting management of agribusinesses; 3) Understanding market information; and 4) Understanding economic factors to consider in expansion or enlargement of agribusinesses. Knowledge of international trade was somewhat less important, as was knowledge of laws affecting agriculture products and understanding business integration. Fiscus (1965) concluded that a higher level of education was needed for elevator managers and recommended post high school curriculum development for skills such as understanding crop marketing and crop market information.

Understanding economic factors affecting management of agribusinesses was suggested as a skill to be taught at an adult or continuing educational level.

With a better understanding of the current educational needs of commodity merchandisers, companies could develop more effective training programs. The industry may find it is beneficial to provide the upfront capital to implement a degree program in the event that the government would not be willing to support one at a public institute. Such programs have been developed by companies in the hospitality industry without the assistance of the government funds (Ingram, 1998).

This research takes a step toward filling the gap in knowledge of merchandisers' current educational needs by providing information on what curriculum would best prepare grain merchandisers and which type of grain merchandisers, if any, would be interested in continuing education opportunities. Thus, this study provides information useful to educators at the undergraduate level and post-graduate level. The sample for our survey was drawn from a database of four thousand licensed grain marketing businesses across the U.S. and Canada. The remainder of this paper is organized as follows. First, a description of the survey instrument and methodology is provided, followed by a summary of the data. Empirical procedures are described for ascertaining factors influencing grain merchandisers' interest in a certification program, annual meetings, and new publications, and results are presented, followed by a concluding discussion.

Survey Instrument/Methodology

The database that was compiled from the Grain Inspection and Warehousing Divisions of each state also contained the listings of trucking companies, and sharecrop farmers. The survey was mailed to various grain merchandisers in the Missouri, Kansas, Minnesota, Iowa, Illinois, South Dakota, North Dakota, Nebraska, Texas, Ohio, and Canada in September 2008. State statutes require businesses who buy a predetermined amount of grain to be licensed. (For example, Missouri Statute 276.401.1 requires businesses/individuals to be licensed if they purchase more than \$100,000 worth of grain.) Hence, other buyers were indistinguishable from their grain merchandising counterparts.

Because of the manner in which the database of potential merchandisers was generated, respondents were asked to read a definition and to verify that they fit the "grain merchandiser" criteria. The definition provided by the University of Arkansas Agriculture Department states:

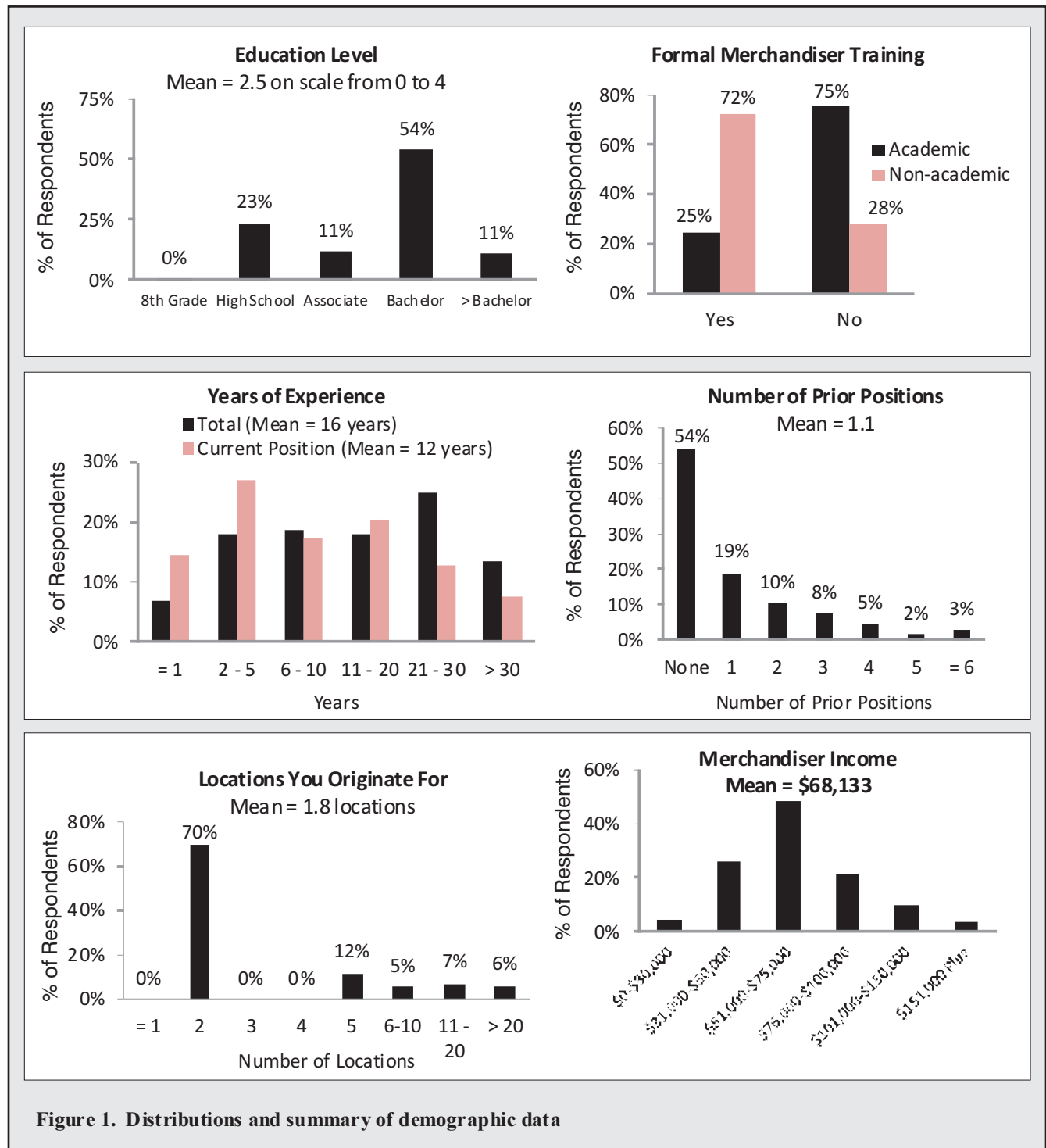
"The term grain merchandiser encompasses all agribusiness firms involved in the procurement, handling, storing, and re-distribution and processing of grain. As such grain merchandisers include country grain elevators cooperatives and non-

cooperatives, shippers and exporters, processors, and feeders.”

If the respondent considered herself or himself a grain merchandiser, then the respondent was asked to proceed with completing the survey. If they did not fit the criteria, then they were asked to check “Not a grain merchandiser” and return the survey. Questions were separated into three categories that were designed to gain a better understanding of the backgrounds of grain merchandisers, what information they find useful, and in what areas their knowledge is limited. See Kliethermes (2009) for the full

survey document, and see Alreck and Settle (1995) for a discussion of various types of survey response bias and the methods employed here to limit the potential for such bias. Before distributing the survey, it was pre-tested with a few grain merchandisers who were asked to review the questions. Their primary feedback included details pertaining to question clarification.

The first set of survey questions inquired about the education level and job experience of each respondent. Within their experience level, merchandisers were asked about what types of training they



What to Teach

have been involved in and the duration of the training. Next, respondents were asked in what areas they wished they would have had more preparation. To determine what type of personality and skill sets merchandisers need, they were asked to rank the importance of several traits. Questions then moved into areas of products marketed, types of clients, and in what ways clients were contacted. Next, merchandisers were questioned about the design of their forward contracts such as, how far into the future they would contract. The last section of category one dealt with compensation of the merchandiser. These questions covered what type of monetary compensation they received on an annual basis (salary, commission, or combination thereof) and average annual income.

The second portion of the survey questions allowed written response to what types of information merchandisers subscribe to for accessing information. Some survey questions were targeted to gain an understanding of which areas merchandisers felt they needed more/better information. These questions were also to ascertain interest in a new market publication aimed at areas merchandisers were able to select.

The final survey questions related to issues concerning today's grain merchandiser. These include types of contracts used, business being conducted outside of the United States, and interest in an accredited merchandising association.

To obtain a diverse sample, at least one address was sampled from each zip code in the finished database. Due to issues, such as name replication, a total of 2,485 surveys were mailed to potential grain merchandisers. Of these, 276 were post marked "Return to Sender" while 279 were returned from respondents. Forty-nine returned surveys (2.22%) were checked "Not a grain merchandiser, and were discarded. The remaining 230 responses were deemed usable surveys which produces a 10.41% response rate. Due to the anonymous nature of the survey, follow up to determine whether differences exist between respondents and non-respondents was not possible. As a response rate of 20-30% is typical for a mail-out survey to a large sample of firms (Henderson, 1990), the response rate for this survey was low. Baruch (1999) acknowledges, however, that there is no set norm for what is considered an appropriate response rate, and lower response rates may be realized with a mail survey.

Summary of Survey Respondents

The mean of respondents' grain merchandising experience was just over 16 years with the lower bound being less than one year of experience and the upper bound being 50 years of experience (Figure 1). A similar average of 18.2 years of experience in grain handling was reported in Fiscus' (1965) earlier study. On average, grain merchandisers change positions (i.e., switch companies) only once and early in their

career (Figure 1), with the majority of their experience coming from their current position. Specifically, the average respondent has held their current position for almost 12 years with a total of about 16 years of experience merchandising.

Survey respondents indicated a variety of educational backgrounds. Less than 1% completed only the 8th grade, 23.2% up to high school, 11.4% up to an associate, 53.5% up to a bachelor, and 11.4% had a post-bachelor degree (Figure 1). The average level of education for grain merchandisers has increased from the mean of 12.1 years (basically high school) reported by Fiscus (1965) to between an associate and bachelor college degree (2.5 on a scale from 0 to 4). Most grain merchandisers did not receive formal academic training towards grain merchandising, however, as the mean statistic indicates that only 25% of respondents confirmed such training (Figure 1). Yet, 73% of respondents indicated that they had received non-academic training. When asked to specify how long, in their opinion, it took to train a new grain merchandiser the majority of respondents indicated at least six months and up to two years.

While over 40 commodities were handled by surveyed merchandisers, the most common were corn with 93.91% of respondents, soybeans with 84.78% of respondents, and wheat with 50% of respondents. Most merchandisers (70%) oversee two locations (Figure 1). Nearly half of merchandisers indicated they monitor basis daily (46%) and intra-daily (43%).

Annual income for grain merchandisers was predominantly salary-based as indicated by 68% of respondents, followed by solely commission-based at 14% with the remainder comprised of combinations thereof and other bonuses. The largest percentage of merchandisers (42%) had an average annual income between \$51,000 and \$75,000 (Figure 1).

Several respondents indicated that wish they had training (45%), seminars (40%), college courses (34%), company courses (24%), and self-help materials/books (23%) prior to becoming a grain merchandiser. Furthermore, respondents ranked the importance of certain skill sets that merchandisers should have. These skills are listed in Table 1 in order of importance from highest to lowest based on the percentage of respondents indicating that the skill is either "Important" or "Very Important." Consistent with other surveys on skills that should be developed in agriculture degree programs, oral and written communication skills are considered important (Nippo, 1983; Harris, 1989; Neal et al., 1991; Barkley, 1991; Cole and Thompson, 2002; Karsten and Risius, 2004; Robinson et al., 2007; Robinson, 2009). About 74.2% of respondents considered oral communication skills "Important" or "Very Important" compared to 57.9% for written communication. Few respondents (50% or less) placed this level of importance on ability to access

public and private information, experience in general, and possession of a broker license. Other than oral communication, the most important skills related to aspects of merchandising that use information regarding futures markets, such as basis (i.e., cash price minus futures contract price) and hedging. This finding is consistent with the importance of understanding the types and processes of crop marketing for elevator managers reported by Fiscus (1965) and the importance of identifying and managing risk for undergraduates entering agri-sales reported by Harris (1989). Logistical issues were also of notable importance with 72.4% of respondents ranking this item as “Important” and “Very Important.” Hence, courses aimed to develop merchandisers should be heavily weighted in these areas, particularly at the undergraduate level.

Respondents also ranked the importance of merchandiser personality traits (Table 2). Nearly half of respondents valued quick thinking and risk tolerance as very important (45% and 48%, respectively), while over two thirds found relationship building very important (67%). Similarly, Robinson et al. (2009) found that employers and agricultural graduates in soft sciences (i.e., economics, education, and communication) consider risk taking and interpersonal relations important. Related to the last point, good people skills ranked number five on a top ten list of best college graduate employee skills summarized from a survey of employers by Cole and Thompson (2002).

Continuing education programs should then assist existing merchandisers in honing their skills in the areas of primary interest identified in Table 3, such as futures and options, basis, spreads, and customer communication. Of particular interest, understanding of future and options markets are one of the top skills merchandisers would like to develop further. Other top skills mentioned by respondents for further development include understanding basis and spreads and being able to adequately communicate with customers. These results are broadly consistent with Karsten and Risius' (2004) survey of agricultural degree alumni and employees, which identifies statistically significant differentials between job requirements and graduates' communication, marketing, and financial management skills that indicate room for improvement.

Nearly half (48%) of the merchandisers are members of the National Grain and Feed Association (NGFA), which hosts annual conferences and provides literature that may help members hone their merchandising skills. About 75% of respondents reported that they participate in professional development by reading information published on the Internet, while 64% read popular press publications and 54% read subscription based information. The top four popular press magazines that respondents read for information include Grain Journal, Feedstuffs, Wall Street Journal, and Feed and Grain. The top four professional marketing services respondents subscribed to are DTN, FC Stone, White

Table 1. Importance Rankings of Various Merchandiser Skills

Skills Set	Mean	Unimportant ^a	Somewhat		
			Important	Important	Very Important
Understanding Basis	4.7	2.2%	2.2%	13.0%	82.5%
Understanding Futures Markets	4.7	1.3%	4.0%	20.1%	74.6%
Oral Communication	4.7	0.4%	6.2%	19.1%	74.2%
Hedging	4.3	5.0%	11.7%	30.6%	52.7%
Placing Future Positions	4.3	3.6%	12.7%	35.3%	48.4%
Logistics ^b	4.1	6.1%	21.4%	30.6%	41.8%
Knowing One Industry Well	3.8	8.1%	31.2%	33.9%	26.7%
Written Communication	3.7	9.5%	32.6%	32.1%	25.8%
Analytic Skills	3.7	7.3%	35.9%	35.5%	21.4%
Access to Public Information	3.5	14.1%	40.5%	27.7%	17.7%
Access to Private Information	3.5	14.5%	36.2%	31.7%	17.7%
Years of Experience	3.5	14.2%	35.1%	33.3%	17.3%
Having a Broker License	2.3	57.2%	30.6%	8.1%	4.1%

^a To save space, “Not Important” and “Least Important” categories were combined due to the low number of responses for these two categories.

^b A typographical error led to a lower response rate (98) on this item. Over 220 responses were obtained on all other items.

What to Teach

Commercial, and Advance Trading Inc. Earlier research indicates similar importance of such publications and professional marketing services for producers marketing grain (Schroeder, et al., 1998; Pennings et al., 2004). Introducing students to these publications before graduation may have value to helping establish the student in the profession sooner.

Eighty-two percent of respondents indicated they would be interested in receiving publications to help improve their marketing skills with a focus on new strategies and developments delivered electronically. Merchandisers regularly sought to improve their marketing skills with 91.4% of respondents indicating they sought to improve their skills with only 8.5% not having an interest in improving their skills. Nearly 19% of respondents indicated they received daily articles aimed at improving their skills, 21% received articles weekly, and 42% received articles monthly. When asked if these articles helped, 81% indicated that they did. Together, these statistics suggest that an internet based delivery system of regular reports or seminars would be conducive to continuing education of merchandisers.

Correlation Analysis

Abbreviated results of a correlation analysis are presented in Table 4 to highlight some of the more interesting associations among variables. Full results are available from the authors upon request. Asterisks (“*”) denote statistically significant correlations among variable pairs.

Statistically significant correlations indicate that merchandiser annual income increases with education, the number of locations overseen, the amount of cross-contact with other merchandisers, and membership in the NGFA. Notably, correlations indicate a statistically positive relationship between income and the importance merchandisers place on hedging skills, and those placing greater importance on hedging also view logistics to be of greater importance and desire to improve their understanding of basis and spreads. The importance placed on logistics is also statistically associated with education level and the number of locations overseen. The significantly negative relationship between formal academic merchandiser training and perceived importance of logistics is difficult to interpret; it may reflect that those with academic training have

Table 2. Importance Rankings of Various Merchandiser Personality Traits

Personality Trait ^a	Unimportant ^b	Somewhat Important	Important	Very Important
Relationships Building	0.9%	5.3%	26.7%	67.1%
Quick Thinker	0.9%	12.4%	41.3%	45.3%
Multi-Tasking	1.3%	13.0%	40.6%	45.1%
Risk Tolerance	3.1%	11.6%	37.3%	48.0%
Patience	1.8%	13.3%	45.3%	39.6%

^a While response rate varied by survey item, over 220 responses were obtained for each item.
^b To save space, “Not Important” and “Least Important” categories were combined due to the low number of responses for these two categories.

Seventy percent of survey respondents would be interested in attending annual educational conferences, which is notably higher than the 48% of respondents that are NGFA members and may attend the association's conferences. About 40% would find a certification process valuable, while 58% would not. Respondents were asked to rank a set of proposed curriculum if an annual conference became a reality. The activities ranked with the largest frequency include skills (e.g., futures markets), more networking (i.e., communication among industry professionals), seminars, and certification. These results suggest that if there was a grain merchandising association, skill development should be the major focus of the association, which could perhaps be substantiated via some sort of certification process.

Table 3. Skills Merchandisers Desire to Develop Further

Merchandising Skills ^a	Percentage of Respondents
Using Futures and Options	38.1%
Understanding Basis	18.6%
Using Spreads	13.3%
Communication with Customers	10.6%
Financial Management	6.2%
Technical Analysis	6.2%
Spread Management	4.4%
Risk Management	4.4%

^a While response rate varied by survey item, over 220 responses were obtained for each item.

determined other skills to be relatively more important or they may underestimate logistics' importance. Positive relationships between the perceived importance of hedging and measures of education, formal academic merchandiser training, and non-academic merchandiser training are more consistent, given the positive correlations between academic and non-academic merchandiser training. If such skills are related to merchandiser income, they should be emphasized in preparatory courses.

Interestingly, statistically inverse relationships exist between education and experience and experience and a desire to improve one's understanding of futures. The former result may partly reflect a trade-off between years spent learning and years working, but given the level of education observed in Fiscus' (1965) earlier study, more likely reflects that younger grain merchandisers tend to obtain higher degrees of education than their predecessors. The latter relationship may reflect that, with time, merchandisers can acquire sufficient knowledge of futures markets through hands-on experience, or that more experienced merchandisers are too close to retirement to justify investment in learning more about futures markets.

and hence should be at least introduced in undergraduate Agriculture Economics courses. Notably, correlation analysis reveals that merchandiser income is positively related to the importance placed on hedging, which is positively related to desire to improve understanding of basis and spreads. Ideally, higher level courses could be developed in these areas for interested individuals at the undergraduate level and for executive masters of grain merchandising programs or other forms of continuing education. The decision to create a degree program or focus more heavily on issues that affect grain merchandisers would have the greatest impact on entering students considering this particular career. This would also help the decision process of young minds when determining if this is the career they wish to pursue.

Another interesting finding is that many merchandisers desire a greater understanding of the future and options market and feel that basis and spreads are a major daily concern and that being able to adequately communicate with customers is important. Merchandisers wish to improve themselves in these areas and would be interested in publications aimed at issues such as new developments and strategies. Based on the average years of

Table 4. Correlations for Selected Variables ^a

	Importance of:				Improve Understanding of:				Demographic Variables						
	Basis	Futures	Hedging	Logistics	Futures	Basis	Spreads	Education	Academic	Non-academic	Experience	Locations	Cross Contact	Income	NGFA
<u>Importance:</u>															
Basis	1.00														
Futures	0.65*	1.00													
Hedging	0.49*	0.48*	1.00												
Logistics	0.45*	0.25*	0.25*	1.00											
<u>Understanding:</u>															
Futures	0.10	0.07	0.02	0.00	1.00										
Basis	0.05	0.07	0.12*	-0.02	2.9×10 ⁻⁴	1.00									
Spreads	0.07	0.11	0.13*	0.13	0.10	0.10	1.00								
<u>Demographics:</u>															
Education	0.02	0.00	0.12*	0.22*	0.03	0.07	0.01	1.00							
Academic	0.10	0.05	0.13*	-0.18*	0.04	-0.01	-0.03	0.14*	1.00						
Nonacademic	0.09	0.09	0.28*	-0.03	-0.05	-0.05	0.08	0.21*	0.17*	1.00					
Experience	-0.03	0.00	0.06	-0.01	-0.11*	0.00	-0.08	-0.12*	0.01	-0.01	1.00				
Locations	-0.04	-0.02	0.01	0.18*	-0.01	-0.06	0.06	0.06	-0.11	0.00	0.05	1.00			
Cross Contact	0.07	-0.01	0.12*	0.20*	0.11*	-0.04	0.01	0.09	0.09	0.10	-0.17*	0.11*	1.00		
Income	0.01	0.03	0.14*	-0.06	-0.03	-0.08	0.02	0.15*	0.11	0.09	0.26	0.31*	0.18*	1.00	
NGFA	0.02	-0.01	0.08	-0.05	-0.07	-0.04	-0.01	0.06	0.13*	0.08	0.01	0.07	0.22*	0.30*	1.00

^a Asterisk (***) denotes statistical significance at the 10% level. See previous tables for variable definitions.

Conclusions

The information presented in this study indicated that grain merchandisers are a diverse group of individuals. Most merchandisers possess a Bachelor's degree, but did not receive formal academic training with an emphasis in grain merchandising. It is apparent that it would be advantageous for colleges to offer courses designed around grain merchandising. Survey responses suggest that a greater understanding of futures and options trading and basis comprehension is beneficial to grain merchandisers,

experience, such educational materials need to be designed around a merchandiser that has a moderate skill level. It is not apparent if demand is adequate to warrant a certification process, but based on the data, it is an option that should be given consideration and explored further. Overall, this survey has begun to fill the gap in the basic knowledge of a grain merchandiser and what information they would find helpful in their marketing activities.

Literature Cited

- Alreck, P.L. and R.B. Settle. 1995. The survey research handbook: Guidelines and strategies for conducting a survey. 2nd ed. Burr Ridge, IL: Irwin Professional Publishing.
- Barkley, A.P. 1991. What skills do graduates need? *NACTA Jour.* 35(1): 53-57.
- Baruch, Y. 1999. Response rate in academic studies: A comparative analysis. *Human Relations* 52(4):421-438.
- Battisti, B.T., C. Passmore, and Y. Sipos. 2008. Action learning for sustainable agriculture: Transformation through guided reflection. *NACTA Jour.* 52(2):23-31.
- Cole, L. and W. Fanno. 2000. Attitudes and perceptions of recent agricultural sciences graduates. *NACTA Jour.* 44(1): 45-51.
- Cole, L. and G. Thompson. 2002. Satisfaction of agribusiness employers with college graduates they have hired. *NACTA Jour.* 46(1): 34-39.
- Dahlgran, R.A. 1993. A case study from agricultural economics: An economic approach to evaluating teaching innovations. *NACTA Jour.* 37(4): 25-29.
- Davis, T.D. and G.F. Patrick. 2000. Forward marketing behavior of soybean producers. In: Proceedings of AAEA annual meetings, Tampa, FL, 30 Jul - 2 Aug.
- Denniston, D.J. and M. Russel. 2007. Use of an online survey to measure an equine program's alumni satisfaction. *NACTA Jour.* 51(2): 2-4.
- Drinka, T.P. and L.A. York. 1992. Market profile as a decision-making tool for hedgers of agricultural products. *NACTA Jour.* 36(1): 42-43.
- Ewing, J.C. 2009. Adding value to agricultural education coursework: Results of a collaborative effort. *NACTA Jour.* 53(1): 42-43.
- Fiscus, K.E. 1965. A comparison of certain knowledge's in agriculture needed by workers in farming, in grain elevator businesses, and in agricultural equipment businesses. PhD Diss., Dept. of Human and Community Development (formerly Dept. of Agricultural Education), Univ. Illinois at Urbana-Champaign, 274 Bevier Hall, M/C 180, 905 South Goodwin, Urbana, IL 61801.
- Gentry, J.W. 1990. What is experiential learning? Guide to business gaming and experiential learning. East Brunswick, NJ: Nichols/GP Publishing.
- Gosen, J. and J. Washbush. 2004. A review of scholarship on assessing experiential learning effectiveness. *Simulation & Gaming* 35: 270-93.
- Hamm, G.F., S.M. Ptasienski, and T.P. Drinka. 1991. A LOTUS futures trading game. *NACTA Jour.* 35(4): 38-41.
- Harris, K. 1989. Skills and characteristics needed by undergraduates choosing a career in agricultural sales. *NACTA Jour.* 33(2): 39-43.
- Henderson, D.A. 1990. The influence of corporate strategy, structure and technology on location of procurement and sales. PhD Diss., School of Business Administration University of Michigan, 701 Tappan Street, Ann Arbor, MI 48109.
- Hudson, M.A., R.M. Leuthold, and S.T. Sonka. 1989. Microcomputer-based networks for teaching agricultural marketing. *NACTA Jour.* 33(4): 8-41.
- Ingram, P. 1998. Changing the rules: Interests, organizations and institutional change in the U.S. hospitality industry. In: Brinton, M. and V. Nee (eds.). *The New Institutionalism in Sociology*. New York, NY: Russell Sage Foundation.
- Karsten, H.D. and M.L. Risius. 2004. Development of an interdisciplinary agroecology major with input from surveys of students, graduates, and employers. *NACTA Jour.* 48(1): 58-64.
- Larke, A., L.B. Hughes, R.E. Linhardt, and E.R. Weston. 1985. Competencies of agronomy graduates. *NACTA Jour.* 29(1): 75-77.
- Kliethermes, B.J. 2009. Commercial grain merchandisers: Interest in professional development. MS Thesis, Dept. of Agricultural Economics, Univ. of Missouri, University Avenue, Columbia, MO 65202.
- Mckenzie, A. 2008. Why teach grain merchandising and basis trader? Basis Trader ® Webpage. <http://www.uark.edu/ua/btrader/>. Division of Agriculture, University of Arkansas. Accessed August 1, 2008.
- Mishra, A., H. El-Osta, and J. Johnson. 1999. Factors contributing to earnings success of cash grain farms. *Jour. of Agricultural and Applied Economics* 31(3): 623-637.
- Neal, S.M., K.D. Hammond, and G.M. Kreps. 1991. Future curriculum needs and graduate attributes of agricultural associate degree programs. *NACTA Jour.* 35(4): 21-23.
- Nippo, M.M. 1983. Ag alumni survey depicts undergraduate educational needs. *NACTA Jour.* 27(2): 13-16.
- O'Rourke, D. 1973. Evaluation of a commodity futures trading exercise as a learning device in agricultural economics. *NACTA Jour.* 17(2): 31-32.
- Padberg, D.I. 1987. Agricultural economics: Finding our future. *American Jour. of Agricultural Economics* 69(5): 883-889.
- Parcell, J.L. and J.R.V. Franken. 2009. Teaching options and futures trading through experiential learning. *NACTA Jour.* 53(3): 11-16.
- Parcell, J. and M. Sykuta. 2005. Undergraduate perceptions of the need for an agricultural entrepreneurship curriculum. *NACTA Jour.* 49(1): 26-31.
- Pennings, J.M.E., O. Isengildine, S.H. Irwin, and D.L. Good. 2004. The impact of market advisory service recommendations on producers marketing decisions. *Jour. of Agriculture and Resource Economics* 29(2): 308-327.
- Robinson, J.S. 2009. Assessing the employability skills of University of Kentucky College of

- Agriculture graduates: A comparison of hard and soft science disciplines. *NACTA Jour.* 53(4): 56-62.
- Robinson, J.S., B.L. Garton, and P.R. Vaughn. 2007. Becoming employable: A look at graduates' and supervisors' perceptions of the skills needed for employability. *NACTA Jour.* 51(2): 19-26.
- Rogers, C.R. 1969. *Freedom to learn*. Columbus, OH: Merrill.
- Schlee, R.P. and K.R. Harich. 2010. Knowledge and skill requirements for marketing jobs in the 21st century. *Journal of Marketing Education* 32(3): 341-352.
- Schrimper, R.A. 2001. *Economics of agriculture markets*. Upper Saddle River, NJ: Prentice Hall.
- Schroeder, T.C., J.L. Parcell, T.L. Kastens, and K.C. Dhuyvetter. 1998. Perceptions of marketing strategies: producers versus extension economists. *Jour. of Agriculture and Resource Economics* 23(1): 279-293.
- Schroeder, T., W.I. Tierney, Jr, and H. Kiser. 1995. Experiential learning through trading agricultural commodities. *Agriculture Finance Review* 55: 89-99.
- Trinklein, D.H. and J.A. Wells. 1989. Use of alumni survey in curriculum development. *NACTA Jour.* 33(2): 21-25.



**Check out the new look to
NACTAteachers.org**