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# Online Graduate Education Needs of Selected Iowa Extension Professionals

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**Abstract:** The study reported here assessed selected Extension professionals' needs related to online graduate education. A census survey of 403 Iowa Extension professionals was conducted. Twenty Extension professionals indicated they were likely to apply for admission to a proposed online Master of Science degree program in agricultural education. Extension professionals have the incentives, computer resources, and computer skills needed to pursue online graduate courses or professional development workshops. This work suggests new ways, including online learning and institutional collaboration on a regional level, to meet educational needs of Extension professionals.

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## Introduction

Faculty in the Department of Agricultural Education and Studies at Iowa State University (ISU) conducted a comprehensive review of its graduate programs and courses in agricultural education. As part of the review process, faculty were interested in determining the demand that might exist among selected Extension professionals and secondary and postsecondary agriculture instructors for online graduate courses and an online-master's degree program. This article focuses on Extension professionals.

A needs assessment study was formulated to aid the review process. According to Reviere, Berkowitz, Carter, and Ferguson (1996, p. 5), "Need is defined as a gap-between the real and ideal conditions-that is both acknowledged by community values and potentially amenable to change." Needs assessment studies generate data that can be used in setting priorities and making decisions about the use of resources. Descriptive survey research is commonly used to generate needs assessment data (Reviere, et al., 1996; Soriano, 1995).

Online learning has grown rapidly, and it will become prevalent this century (Draves & Coates, 2007). Allen and Seaman (2006) reported that 3.2 million students took at least one online course in the fall of 2005. This represented an increase of 39% from the previous year. According to Roberts and Dyer (2005), agricultural education programs at institutions of higher education across the United States have experienced a moderately high demand for distance education courses.

Interest in distance learning is on the rise among Extension professionals. Based on a 1997 examination of in-service education needs of county Extension staff, Kelsey and Mincemoyer (2001) determined that agents were open to distance learning but preferred face-to-face methods of instruction. Three years later, Conklin, Hook, Kelbaugh, and Nieto (2002) conducted a needs assessment of Extension professionals in Ohio and determined that distance learning technologies were preferred to a much greater extent than the technologies were actually used in in-service education. The disparity between preference and use was especially large for Web-based training. Results from Senyurekli, Dworkin, and Dickinson's (2006) survey showed an even stronger interest in online professional development; nearly all (95%) respondents were interested in professional development offered online as opposed to traditional methods.

Extension professionals' interest in distance learning extends to graduate-level courses and degree programs (Edwards, McLucas, Briers, & Rohs, 2004; Wilson & Moore, 2004). According to Edwards et al., about 60% of Extension agents in Georgia were interested in pursuing a graduate degree through distance learning. Wilson and Moore reported that 27 of 60 Extension agents who did not already have a master's degree were interested in pursuing an online master's degree program in agricultural and Extension education.

According to B. S. Stoll (personal communication, December 21, 2007), county Extension education directors and Extension field specialists in Iowa must earn a master's degree within 8 years of hire to maintain their employment. Advancement is based on having the master's degree, years of service, and quality and quantity of work. Extension professionals are expected to remain current and participate in professional development activities.

We know that online learning is increasingly popular among Extension professionals, that Extension professionals in other states are interested in distance learning degree programs, and that a master's degree is needed to maintain employment and advance within Iowa Extension. We also know that pursuit of employment-related goals is often a motivator in the decision to pursue distance learning opportunities (Roberts, Moore, & Dyer, 2005). The question that remains is whether online courses and a proposed online master's degree program in agricultural education could meet the graduate education and/or professional development needs of selected Iowa Extension professionals.

## Purpose

The study reported here assessed Iowa Extension professionals' needs related to online graduate-level coursework and a proposed online master's degree in agricultural education. Objectives of the study were to:

1. Describe selected demographic characteristics of Extension professionals who participated in the study.
2. Describe Extension professionals' needs and incentives related to graduate education.
3. Describe Extension professionals' resources and proficiencies related to pursuing an online Master of Science degree program in agricultural education.

## Methodology

The target population for this census survey consisted of 403 Extension professionals in Iowa with the following job titles: County Youth Coordinator, County Extension Education Director, Extension Program

Assistant, and Field Specialist. The list of Extension professionals was generated from a database of all Iowa Extension employees maintained by ISU Extension administration.

The questionnaire was based on questionnaires used for similar studies in North Carolina (Wilson & Moore, 2004) and Georgia (Edwards et al., 2004). A panel of six experts who were selected to represent a broad spectrum of stakeholder interests determined that the questionnaire was face and content valid. A pilot test was conducted with 16 graduate students in agricultural education. This group included students whose primary focus and expertise was Extension education. The test-retest reliability coefficient for the questionnaire was .87.

Dillman's (2000) recommendations were carefully followed in designing and implementing the survey. Data were collected online using SurveyMonkey.com. Extension professionals were contacted by electronic mail up to four times and by U.S. mail once. Two hundred sixty five Extension professionals responded, but only 244(61%) considered Extension to be their primary occupation. These 244 Extension professionals comprised the data sample.

Non-response error was addressed using Lindner, Murphy, and Briers' (2001) method number one. This involved comparing early ( $n = 210$ ) and late ( $n = 34$ ) responses to the questionnaire. Late respondents were defined as those who responded after the fourth and fifth contacts. The number of late respondents exceeded the minimum number ( $n = 30$ ) recommended by Lindner et al. There was no statistically significant ( $p < .05$ ) difference between early and late respondents on 18 of 21 comparisons. Late respondents were less likely to need graduate courses within the next 5 years to maintain their current employment or renew a professional license. Late respondents were more likely to report that their employer encouraged continued formal education. Early respondents were more likely to indicate that their employer encouraged nonformal professional development. The reader is cautioned not to generalize results for these three variables to the target population of Iowa Extension professionals.

Data were analyzed with SPSS version 15 for Windows. Frequencies, percentages, means, and standard deviations were used to describe demographic characteristics of the Extension professionals, their needs and incentives related to graduate study, and their resources and proficiencies related to pursuing an online Master of Science degree program in agricultural education.

## Findings

### **Objective 1. Describe selected demographic characteristics of Extension professionals who participated in the study.**

A majority of the Extension professionals were female (66%) and had a Master of Science degree or higher level of education (59%). About 8% ( $n=18$ ) of the Extension professionals were enrolled in a master's degree program at the time of this survey. On average, the Extension professionals were 48 years of age ( $SD=10$ ) and had 21 years of professional experience ( $SD=11$ ). The median distance that the Extension professionals lived from a university that offers a graduate program in agricultural education was 100 miles.

Forty (17%) of the Extension professionals would consider pursuing an online master's degree program in agricultural education, and 26 (11%) would likely apply for admission to such a program at ISU. Of the 74 (30%) Extension professionals whose highest level of education was the Bachelor of Science degree, 28 (38%) would consider pursuing an online master's degree program in agricultural education, and 20 (27%) would likely apply for admission to such a program at ISU.

## Objective 2. Describe Extension professionals' needs and incentives related to graduate education.

Table 1 summarizes Extension professionals' responses to questions about needs and incentives related to graduate study. Only 11% of the Extension professionals indicated a need for graduate courses in the next 5 years to maintain their employment or renew a professional license. A majority (59%) indicated that a master's degree could or did increase their salary, but only 8% would receive a financial incentive to take courses after earning a master's degree. Most (90%) of the Extension professionals were encouraged by their employer to participate in nonformal education, while just under half (48%) were encouraged to continue their formal education. Almost half of the Extension professionals reported their employer would provide tuition assistance (47%) and release time (45%) for taking classes.

**Table 1.**  
Percent of Respondents Indicating Specific Needs and Incentives

Need/Resource	<i>f</i>	%
Need graduate courses to maintain employment or renew a professional license	27	11
Masters degree can/did increase salary	141	59
Financial incentive for taking courses beyond the masters degree	20	8
Employer encourages formal education	115	48
Employer encourages nonformal education	218	90
Employer provides tuition assistance	112	47
Employer provides release time to take courses	109	45

## Objective 3. Describe Extension professionals' resources and proficiencies related to pursuing an online Master of Science degree program in agricultural education.

Table 2 summarizes data related to Extension professionals' computer resources and proficiencies. Most (83%) of the Extension professionals have high-speed Internet access, and a majority could take online courses from home (66%) or from work (73%). Most (96%) Extension professionals rated their computer skill as moderate or high. A majority (59%) of the Extension professionals had taken a distance education course, but only 30% had taken an online course.

**Table 2.**  
Percent of Respondents with Specific Computer Resources and Levels of Proficiency

<b>Resource/Proficiency</b>	<i>f</i>	<i>%</i>
Could take online courses from home	162	66
Could take online courses from work	178	73
Have high speed Internet access	198	83
Computer skill: High	77	32
Computer skill: Moderate	154	64
Computer skill: Novice	10	4
Previously taken an online course	72	30
Previously taken any distance education course	140	59

## Conclusions and Recommendations

Twenty Iowa Extension professionals whose highest level of education was the Bachelor of Science degree indicated that they would likely apply for admission to a proposed online Master of Science degree program in agricultural education. When combined with 82 high school agriculture teachers who indicated that they would likely to apply for admission to the same degree program (Miller & Miller, 2006), it was clear that a strong demand existed for an online Master of Science degree program in agricultural education in the state of Iowa.

As a result of this demand, faculty in the Department of Agricultural Education and Studies at ISU voted unanimously to make its Master of Science degree in agricultural education available completely online. We decided on a 15-credit-hour core that includes the following courses: foundations of agricultural education; program planning; learning theory; introduction to research; and instructional methods. Core courses focus on principles that are applicable across a range of contexts. Students also complete a two-credit-hour creative component and take an additional 13 credit hours of electives. The new program officially began in the fall of 2007.

Extension professionals indicated that their employers encouraged both formal and nonformal education, but there was much more encouragement for nonformal educational programming. Agricultural education faculty at ISU could make an additional contribution to meeting professional development needs of Iowa Extension professionals through nonformal workshops and seminars. This programming could be delivered by traditional face-to-face methods, but data suggest this programming also could be successfully delivered with online learning technologies.

We recommend that agricultural education programs across the United States conduct similar needs assessment studies. Many programs could find that they have adequate demand and resources to launch their own programs. Some might discover a need that they alone are unable to meet. In either case, there might be opportunities for institutions to engage in collaborative relationships including statewide or regional consortia. Working together, agricultural education programs with limited resources could meet the graduate education needs of Extension professionals, and larger programs could enhance their course offerings.

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