

Introduction

Extension is a non-formal education program that is present in parishes and counties across the United States (Rasmussen, 1989; Seevers & Graham, 2012). Extension agents are tasked with developing and communicating educational programs to local clientele based on the needs of their specific community (Seevers & Graham, 2012). Communication is a considerable piece of the Extension agent job and has been identified as a competency Extension agents must possess (Benge et al., 2011; Gibson & Hillison, 1994; Lakai et al., 2014; Muscato et al., 2020). Additionally, Extension agents have expressed a need for professional development opportunities focused in developing their communication skill capacity (Benge et al., 2011; Benge et al., 2020; Gibson & Hillison, 1994; Lakai et al., 2014; McClure et al., 2014; Scherer & Masiclat, 1988). In response to this request, UF/IFAS Extension included a communication portion to the on-board training for newly hired Extension faculty.

The UF/IFAS Extension Faculty Development Academy (EFDA), also referred to as the Academy, is a mandatory professional development training program for new UF/IFAS Extension agents, regional and state specialized agents, and state specialists entering the profession. The Academy consists of two sessions (i.e., Session A and Session B) and is offered twice a year in the spring and in the fall. The Academy provides foundational Extension training for new Extension faculty hires and focuses on the competencies of program planning, program evaluation, teaching and learning, and communication, as many new Extension agents are not hired with an Extension-specific skillset (Harder et al., 2009; Harder et al., 2010) needed to be successful (Benge et al., 2011). Both Session A and Session B are three days long, and Session B provides the Academy participants an opportunity to show their applied teaching and communication skills and receive feedback from agricultural education and communication faculty and graduate students. The spring 2019 cohort of early career Extension faculty met for session A January 29-31 and for session B March 26-28. The fall 2019 cohort met for session A September 10-12 and for session B October 15-17.

The purpose of the communication portion of the Academy was to develop Extension faculty's design skills. The objectives were for the Extension faculty to gain knowledge of basic design principles and practice those principles by creating a design piece of their choice that they could use for their Extension program as either an educational tool or marketing material. The design principles covered included: focal point, contrast, balance, movement, pattern, and unity; font and color choices; and tools to design (i.e., Canva and Microsoft Publisher). The Extension faculty were able to create this design piece during Session A of the Academy. Additionally, the Extension faculty were asked to bring a different piece they designed to Session B where they received individualized feedback from communication specialists. This study focused on assessing the Academy participants' knowledge of design principles and their intention to use design principles in their Extension programs.

Theoretical Framework

The theoretical framework we chose for our study was Rogers' (2003) theory of diffusion of innovation (DOI). An innovation is defined as an "idea, practice, or object that is perceived as anew by an individual or other unit of adoption" (p. 12), and diffusion is defined as "the process in which an innovation is communicated through certain channels over time among the members of a social system" (Rogers, 2003, p. 5). Adopters can be sorted into five classifications, or

categories – innovator, early adopter, early majority, late majority, and laggard – based upon how quickly they adopt an innovation. DOI theory suggests that an innovation’s rate of adoption is determined by five characteristics of the innovation: relative advantage, compatibility, complexity, trialability, and observability (Rogers, 2003). Additionally, Rogers suggests that the innovation-decision process can aid in understand how an individual or unit chooses to adopt a behavior.

The innovation-decision process “consists of a series of choices and actions over time through which an individual or a system evaluates a new idea and decides whether or not to incorporate the innovation into ongoing practice” (Rogers, 2003, p. 168). This process is made of five sequential stages that an individual or unit moves through while deciding to adopt or not:

Stage 1: Knowledge – Occurs when the individual is exposed to an innovation’s existence and increase their understanding of how it functions.

Stage 2: Persuasion – The individual forms a favorable or an unfavorable attitude towards the innovation.

Stage 3: Decision – The individual engages in activities that lead to a choice to adopt or reject the innovation.

Stage 4: Implementation – Occurs when the individual put the new idea into use.

Stages 5: Confirmation – The individual seeks reinforcement of an innovation-decision already made, but they may reverse this decision if exposed to conflicting messages about the innovation.

Purpose and Objectives

The purpose of this study was to assess Florida early career Extension faculty’s adoption of design principles after completion of the 2019 UF/IFAS Extension Faculty Development Academy (EFDA). The following objectives guided the direction of this study:

1. Determine Florida Extension faculty’s design principles knowledge and behavior intentions immediately after participating in the Academy.
2. Identify Florida Extension faculty’s adoption of design principles in their communication work following the Academy.

Methods

Population and Sample

The population for this study included new UF/IFAS Extension faculty who participated in the Academy at the beginning of their career. The researchers gained access to the Academy participants in two ways:

- The lead author was an instructor in the Academy regarding design principles.
- The Academy coordinator provided the names and emails of the Academy participants to conduct the interview portion of this study.

The sample for this study included all Academy participants of the spring ($n = 14$) and fall ($n = 18$) 2019 EFDA cohorts ($N = 32$).

Instrumentation

A mixed methods approach was utilized to gather pertinent information to satisfy the study objectives. First, to determine Academy participants' design principles knowledge and behavior intentions, data were collected through a post-survey questionnaire and through qualitative interviews. The questionnaire was developed using Qualtrics, an online survey questionnaire platform, and was sent to all Academy participants via email after completing their respective academies. The questionnaire items stemmed from the program objectives of the Academy as it related to the communications portion of the program. Participants were asked to rate their level of agreement or disagreement on a five-point, Likert-type scale with the following five statements:

1. Prior to the presentation, I had considerable knowledge about design principles.
2. After the presentation, I have considerable knowledge about design principles.
3. After the presentation, I understood design principles better.
4. I can now use design principles more effectively to communicate about my Extension program.
5. I plan to implement content from the presentation into my personal and professional life.

To understand Academy participants' adoption of design principles following their participation in the Academy, we conducted telephone interviews with Academy participants four to five months after they had completed the Academy. The interviews were semi-structured in nature to ensure the conversation met the needs of the interview protocol but also allowed the opportunity for the participants to discuss related concepts they felt inclined to share. The interview protocol was developed based on Rogers' (2003) five characteristics of the innovation-decision process. The following items were included in the interview protocol to guide the discussion:

1. Extension faculty's experiences with design before becoming Extension faculty.
2. How Extension faculty used design principles or put their knowledge of design principles to use.
3. How Extension faculty used their knowledge of design principles to better communicate their messages.
4. Barriers and successes experienced using design principles.

An expert panel was used for both the questionnaire and interview guide to establish face and content validity (Ary et al., 2006). The panel consisted of four members. The first was a graduate assistant in agricultural communication. The second panel-member was an Extension specialist and has worked in Extension for 13 years, seven of which have been an Extension agent. The third and fourth panel members were communication faculty experts. The same panel reviewed both study instruments. Institutional Review Board (IRB) approval was received from the University of Florida IRB Office prior to conducting this study.

Data Collection

The Academy coordinator emailed the questionnaire to Academy participants at the end of the Academy program. The five questions for this study were included in the larger evaluation

for the Academy. The questionnaire was distributed with an anonymous link using Qualtrics at the end of the Academy. The advantages of using an online survey for this study were low cost, anonymity, quick response time, and ease of distribution and submission (Ary et al., 2006; Dillman et al., 2009). All Academy participants ($n = 32$) completed the survey, yielding a response rate of 100%.

Academy participants were contacted four months after completing the Academy to participate in the telephone interview. The interviews were scheduled and conducted four and five months after the participants completed the Academy. The interviews were 15-20 minutes in length and were audio recorded. Sixteen of the 32 Extension faculty participated in an interview (spring cohort $n = 7$; fall cohort $n = 9$) for a 50% participation rate. Once the interviews were completed, the audio recordings of the interview were transcribed, and the participants' names were replaced with a participant number and then later assigned a pseudonym. Thus, the participants' identities were no longer able to be traced back to them.

Data Analysis

The data collected from the post-survey questionnaire were analyzed using descriptive statistics, specifically individual item means and standard deviations (Shavelson, 1996), to determine if Academy participants increased their knowledge or and intention to use the knowledge learned regarding design principles. The following real limits of the scale were used to interpret the mean scores: 1.00 - 1.49 = *strongly disagree*, 1.50 - 2.49 = *disagree*, 2.50 - 3.49 = *neither agree nor disagree*, 3.50 - 4.49 = *agree*, 4.50 - 5.00 = *strongly agree*.

The interview data were analyzed for emergent themes using the constant comparative method (Merriam, 1998). We used five strategies to maintain credibility of study, as Eisner (1991) stated that establishing credibility within qualitative research “allows us to feel confident about our observations, interpretations, and conclusions” (p. 110). These strategies include investigator triangulation, peer debriefing, member checking, thick and rich descriptions, and clarifying researcher bias. The following themes emerged: level of ability, inappropriate timing of the training, and value of learning design skills.

Limitations

The results of this study are specific to the UF/IFAS Extension Academy and cannot be generalized outside the scope of this population and sample.

Results

Objective 1. Determine Florida Extension faculty's design principle knowledge and behavior intentions immediately after participating in the Academy.

The survey results indicated that the spring 2019 EFDA cohort rated *after the presentation, I have considerable knowledge about design principles* the highest, while the fall 2019 EFDA cohort rated *after the presentation, I understand design principles better* the highest (see Table 1). Collectively, the spring and fall 2019 EFDA cohorts rated *I plan to implement content from the presentation into my personal and professional life* the highest. The spring

cohort, fall cohort, and the two cohorts combined indicated they agreed least with the statement *prior to the presentation, I had considerable knowledge about design principles.*

Table 1

Extension faculty's ability and intent to use design principles in their work			
Statement	Spring Cohort <i>M</i> (<i>SD</i>)	Fall Cohort <i>M</i> (<i>SD</i>)	Overall <i>M</i> (<i>SD</i>)
I plan to implement content from the presentation into my personal and professional life.	3.92(.86)	4.00(.77)	3.97(.79)
After the presentation, I have considerable knowledge about design principles.	4.00(.71)	3.89(.96)	3.94(.85)
After the presentation, I understand design principles better.	3.77(.73)	4.06(.80)	3.94(.77)
I can now use design principles more effectively to communicate about my Extension program.	3.69(.85)	3.89(.58)	3.81(.70)
Prior to the presentation, I had considerable knowledge about design principles.	3.00(.91)	3.11(1.02)	3.06(.96)

Note. Real limits of the scale: 1.00 - 1.49 = *strongly disagree*, 1.50 - 2.49 = *disagree*, 2.50 - 3.49 = *neither agree nor disagree*, 3.50 - 4.49 = *agree*, 4.50 - 5.00 = *strongly agree*

Objective 2. Identify Florida Extension faculty's adoption of design principles in their communication work following the Academy.

Level of Ability

Prior to their experience in the Academy, the Extension faculty expressed that their design experience was minimal. The faculty had the most experience using Microsoft Office products such as Word, PowerPoint, and Publisher to design materials. Occasionally, some Extension faculty had reported using Canva or some Adobe Creative Cloud products. Many of the Extension faculty indicated that since working in Extension they have needed to create various educational and marketing materials for their Extension programs. Nick shared that design skills are something “[he] uses greatly, and [his] experiences have grown tremendously...Since the Academy [he] has created a number of fact sheets and flyers.”

Inappropriate Time of the Training

The Extension faculty reported favorable sentiments about the communication portion of the Academy. Matt said, “Pretty much everything I picked up in the Academy, what you taught, and what I taught myself afterwards has encouraged me to think more about design, especially communicating to potential clients or stakeholders trying to advertise what we actually do.”

However, the Extension faculty repeatedly mentioned that they felt the communication training was received too soon in the timeline of their job. Many of them did not have their Extension programs developed, therefore they were not able to design or think about designing educational or marketing materials to fit their program. They were more concerned with learning the other many intricacies of an Extension agent's job. Ashley shared:

That kind of seminar, to me, would almost be better like now, four- and five-months in. It would be really great to have some sort of hands-on experience. Let's bring our laptops, let's sit down, try some things with a printer, and produce some things. I am getting ready for camp now, and I am probably going need that. In January for the training, I had literally just started my job the week before and it just flew right over my head.

John went further to express that he wished he was further into his Extension program and said, "I wish I had been working on something because I probably would have taken more from the training."

Value of Learning Design Skills

The Extension faculty's level of involvement with designing educational and marketing material varied depending on county budgets and office structure. Some faculty, like Emily and Amy, have other individuals in their Extension offices that help them with designing materials. While Extension faculty like Samuel have little to no monetary or personnel assistance and are expected to design their educational and marketing materials for their educational programs. Thus, there were varying degrees of utility expressed by the Extension faculty, although, all of them found value in learning design skills.

The Extension faculty reported finding value in training dedicated to building design skills. For example, Stephanie mentioned, "I've definitely experienced that having—personally with all the other teaching that I've done, having really good visual is just so important to the overall teaching experience." Similarly, Extension faculty often stated that learning how to appropriately design educational and marketing materials using different programs was an interest of theirs. John expressed, "Design has never been something I feel like I am good at, and I would like to get better at different programs that allow me to put together better materials." Many faculty expressed their openness to training focused on educational and marketing material design in the future. As Emily stated, "I am definitely open to more training and learning, so if there are more opportunities, let me know."

Conclusions, Discussion, and Recommendations

The spring and fall cohort participants of the Academy *agreed they plan to implement content from the presentation into their personal and professional life, can now use design principles more effectively to communicate about their Extension program, understand design principles better, and had considerable knowledge about design principles* after participating in the communication portion of the Academy. They also indicated they *neither agreed nor disagreed they had considerable knowledge about design principles* before the Academy. Thus, the faculty retrospectively perceived they increased their knowledge about design principles; Meaning, the training was successful in providing an opportunity for the Extension faculty to

learn about design principles and how they can incorporate those principles into their work of designing educational and marketing materials (i.e., knowledge stage; Rogers, 2003).

In addition, the Extension faculty expressed that receiving this type of communication training was not appropriate for this stage of their career. They found these skills valuable; however, they were not able to adopt or apply them yet in their work. Thus, they had an overwhelmingly positive attitude about learning design principles to better their communication efforts (i.e., persuasion stage), but at the decision and implementation stage of the process they decided not to fully adopt design principles in their work (Rogers, 2003). Other information and elements of learning their job were a larger priority for them this early in the timeline of their career.

The findings from this study are consistent with the literature as the Extension faculty admitted possessing a low level of experience and ability incorporating design principles in their work. Yet, the Extension faculty understand the value of this type of communication training (Benge et al., 2011; Benge et al., 2020; Gibson & Hillison, 1994; Lakai et al., 2014; McClure et al., 2014; Muscato et al., 2020; Scherer & Masiclat, 1988) and requested future professional development opportunities at a different time in their career to increase their communication skill set in this area.

Based on this study, it is recommended that new Extension faculty should not be learning about design principles during the Academy, but rather other communication knowledge and skills that are more appropriate for entry-level Extension faculty. Communication is an important skillset for Extension faculty (Benge et al., 2020; McClure et al., 2014), and the Academy coordinator(s) should conduct a needs assessment to see what specific communication knowledge and skills new Extension faculty need that could be included in the Academy. Because the Academy participants increased their knowledge and had a positive attitude towards design principles, it is recommended the design principles section of the Academy be taught later in an Extension agent's career. Though this study focused on communication portion of the Academy, it is important to ensure that the other competency areas of the Academy are being utilized by new Extension faculty. It is a limitation of this study that Extension agent participants were from Florida and these results may not generalize to other state Extension new agent training programs. Coordinators of other state Extension new agent training programs can use this study's model to understand what participants are learning and if they are using the information being taught.

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