Where Do We Go from Here?:
Credible and Actionable Evidence in Extension

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The evolution of evaluation in the Cooperative Extension System (Extension) has gone through many changes over the years, from focusing on participation, to the measurement of outcomes, and then impacts. Now, the new evolution in Extension is the use of credible and actionable evidence. This special edition of the Journal of Human Sciences and Extension (JHSE) explored the theme, “What is credible and actionable evidence in Extension programs?” The authors of the articles in this issue wrote about the important concepts ahead of us as we begin on the road to more credible and actionable evidence. This article provides some closing thoughts on this special issue and sets forth challenges as we move forward.

Keywords: credible evidence, actionable evidence, evaluation, Cooperative Extension, stakeholders

“Trust is built on credibility, and credibility comes from acting in others’ interests before your own.”

—Stephen Denny

Prelude

Our professional colleagues, especially those in program evaluation, provide a rich dialogue on the dimensions and implications of credible and actionable evidence in policy, programs, and personal decisions (Donaldson, Christie, & Mark, 2015). Among consumers, court jurors, or citizens in general, critical and conscientious decision-makers generally affirm the need for “the best available evidence,” whether pursuing their own interests or contributing to deliberative democracy. As pragmatists—and there are both opportunities and dangers in pragmatism—Americans are interested not just in trustworthy and relevant evidence, but in “what now?” or “where does this lead?” evidence of action-ability. This special edition provides a bridge between the deep reflection of evaluators and philosophers and the everyday questions that are implicit— but need to be explicit—in Cooperative Extension (Extension) work. Hopefully, reading and reflecting on these themes will help practitioners, administrators, and scholars understand, engage, and contribute to that work more effectively.

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Much of the debate about what is credible has focused on the quality of scientific evidence that undergirds or affirms the efficacy of programs or policies. Utilizing and documenting best practice evidence employing appropriate scientific or systematic methods has been the primary focus of this special edition. Evaluation experts (Greene, 2015; Schwandt, 2015; Shadish, Cook, & Leviton, 1991) also acknowledge the significance of practical credibility (e.g., understanding where and how knowledge works for individuals or policy decision-makers) and relational credibility (e.g., whether the source of information is trusted). Several authors in this special edition highlight these broader meanings of credibility in the context of discussing program development, implementation, and evaluation.

The diversity of Extension disciplines, stakeholders, and delivery models preclude a single criterion for credibility. Indeed, Extension’s place at the nexus of rapidly changing scientific discoveries, social, technical, and economic conditions and contexts precludes a single, static definition of credible evidence. Thus, Extension professionals must understand not only the current best evidence but the assumptions on which their teaching and listening rest. Likewise, their first and most important work in applying best practices is to interpret how and why those practices are effective, but not before they themselves reflect on the evidence behind a program and understand stakeholders’ needs and concerns, then work with stakeholders to make an appropriate match of credible evidence with immediate and sustainable needs.

Hopefully, readers will find our work a relevant and trustworthy, or credible, source of insight and guidance for thinking and doing for the public good. This special edition is designed to start the conversation, not provide an encyclopedia or practice manual. We believe the future of Extension rests on continuing this conversation at all levels, in all disciplines, in every context, and, as appropriate, with every stakeholder and partner.

**Background/History**

Understanding where we go often involves understanding where we have been and where we are today. There is a long history of the use of evaluation in Extension. In fact, Seaman Knapp and other Extension pioneers used demonstrations to provide concrete evidence of the efficacy of new hybrids or methods, encouraged dialogue to help producers understand not just what works, but how, where, and why it works (Seevers, Graham, Gamon, & Conklin, 1997). Different conditions required different evidence for action: larger farms might produce more efficiently, but insect pests plagued those using monocultural practices.

In 1959, the Division of Extension Research and Training, Federal Extension Service at the USDA published a document entitled “Evaluation in Extension” (Bryn et al., 1959) in which they discuss several aspects of evaluation still debated today. More recently, the General Accounting Office (GAO) released a report on the mission of Extension (GAO, 1981). In this report, the GAO stated that Extension must use resources as efficiently as possible and that improved performance and assessment of impact were needed to determine the effectiveness of...
programs. One thing we know for sure is that change and innovation have been a constant in Extension. Although the USDA document discussed evaluation concepts still used today, change and innovation have occurred with regard to evaluation in Extension over the past three decades.

As late as the 1990s, reporting on participation or customer satisfaction was considered to be sufficient evaluation in Extension. With the passing of the Government Performance and Results Act of 1993 (GPRA, Office of Management and Budget, 1993) and the Agriculture Research, Extension, and Education Reform Act of 1998 (AREERA, 1998), the requirements for evidence began the shift from reporting outputs, such as participation to the reporting of outcomes such as knowledge, skills, and practices. The GPRA put an expectation on agencies receiving federal funds to collect evidence on items such as goal setting, measuring results, and reporting these results. AREERA amended the original Smith-Lever Act of 1914 and required additional information from land-grant institutions, including programmatic summaries, scientific review processes, stakeholder input processes, multi-state and integrated work, and planned programs. Current program reporting requirements of the National Institute of Food and Agriculture (NIFA) include evidence of impact for programs delivered at the state or institutional level. These impacts, based on the planned programs, are used to fulfill funding strategies and legislative requests. During this time, there has also been an increased emphasis on demonstrating the value of Extension to our stakeholders (Franz & Townson, 2008).

During the timeframe from the 1990s to the present, Extension professionals have invested time and energy to the areas of evaluation and accountability. Communities of Extension evaluators and program staff have met formally and informally to discuss issues, identify challenges, and implement strategies to meet those challenges at the state, regional, and national levels.

To illustrate this, let’s look at the recent evolution of evaluation of Extension programs in Texas. In the 1980s and 1990s, Texas focused on the reporting on both direct and indirect program clientele contacts. This evidence provided stakeholders with information on the extent of the reach of Extension programs. As we moved into the early 2000s, evaluation efforts moved to a structured and comprehensive assessment of program clientele satisfaction. Efforts were conducted to assess satisfaction of Extension clientele, volunteers, and elected officials. These efforts led to a formalized performance measure legislated by the State of Texas.

As we moved further into the 2000s, a shift was made to increase the assessment of knowledge, attitudes, skills, and application. The focus on application was primarily assessed by the measurement of the intention of clientele to adopt a behavior or a best management practice. In some cases, these data were collected to meet the required laws or policy, such as GPRA or AREERA. As we entered the 2010s, impact evaluation became critical. The primary focus of these efforts was on economic impact. This was a major shift in thinking and the culture. We were being asked about return on investment and economic benefits of our efforts. Public value
also became an important addition to our evaluation processes. Public value added another way to tell the story of the value of Extension. Public value allowed us to show the value of our efforts beyond just our program participants, expanding the distribution of that information to the general public (Kalambokidis, 2004). In addition, a move was made to use new tools for telling the story such as infographics, video, and social media.

This brings us to the newest evolution of Extension evaluation: the collection and use of credible and actionable evidence. As described in other articles in this special issue of the JHSE, credible evidence is defined as “information that stakeholders perceive as trustworthy and relevant” (Donaldson, 2015, p. 5). In Extension, as well as other community education programs, we have collected evidence for decades on our efforts. We have generally focused on data being scientifically valid. However, have we ever determined or focused on the credibility of our evidence to our stakeholders? Is our evidence credible just because it comes from Extension? Is it credible because it is based on research? How do we move past just collecting evidence to collecting evidence that is deemed credible and actionable?

This special issue has addressed issues, challenges, and opportunities with regard to credible and actionable evidence and how these concepts can be used in Extension. The authors raised questions, identified concepts and practices, and hopefully sparked discussion and debate for this topic. As publicly accountable institutions, land-grant university programs like Extension must utilize these concepts and practices to maintain and increase its credibility in educational delivery and the evidence that supports its value to stakeholders.

Reflecting on Special Edition Insights

Now that the concept of credibility and actionability has been raised, how does Extension address these concepts and the issues raised in this special edition? Let’s review the concepts and conclusions discussed in this special issue.

In the article, “Whose Extension Counts? A Plurality of Extensions and Their Implications for Credible Evidence Debates,” Tom Archibald focused on how we define Extension and the implications of these definitions. Archibald argued for an ontological plurality of Extensions and that this prevents a one-size-fits-all approach to credible evidence. He went on to summarize that we need to use the best-suited methods to obtain credible evidence based on the ontology of Extension being followed. This provides a strong argument for knowing who we are and what we do. Extension professionals must reflect not only on their methods but their underlying assumptions about what is valued by stakeholders for their communities or organizations. We cannot assume that what is good for one stakeholder will be sufficient for another.

Archibald also discussed the general debate over the concept of credible evidence and the use of randomized control trials (RCT) as the ‘gold standard’ versus other methods for gathering credible evidence. So how are RCTs used in Extension? One might also ask are RCTs used in
Extension or should they be used in Extension. As we think through these questions, we must be guided by what we are trying to measure and for whom. RCTs are one method we might use to obtain credible evidence. As noted in his article and the article on quantitative and qualitative methods by Jones, Gwynn, and Teeter, there are other methods available to be used. For example, how do qualitative methods play a role in credible evidence if RCTs are the gold standard? The methods and measures must fit the needs of the program and the stakeholders.

In their article, Chazdon and Grant focused on the relationship between situational complexity and credible evidence. Situational complexity by definition from Chazdon and Grant refers to the differences between simple, complicated (both technically and socially), and complex situations. These descriptions most definitely fit the Extension model. So how do we approach these issues? We must build relationships with our stakeholders. This includes knowing their needs, how they use evidence, and what story they are trying to tell. As with programming, evaluations require different types and amounts of evidence for different stakeholders.

Chazdon and Grant concluded that relationships with stakeholders are crucial to building credibility with stakeholders and that, in some cases, credibility is more about the program and the people than the evaluation. “One-size-fits-all” credible and actionable evidence may sound efficient and fair but rarely meets the real-time needs of program partners. Thus, evaluative thinking and dialogue are critical to both program management and accountability.

In the article on measurement, Marc Braverman discussed the relationship between measurement and credible evidence. Braverman concludes that there are a number of factors (recommendations) that must be taken into account with regard to credible evidence. These include quality, rigor, engagement, education, communication, and resources. There is a saying that “What gets measured, gets done,” but if programs are not measured accurately, evidence may be neither credible nor useful. Whether Extension educators are using common measures, adapting measures from other contexts, or developing their own measures, rigorous reflection and pilot-testing are critical to generating quality data and insights for program accountability, improvement, and partner education.

Related to this article is the paper on methods authored by Jones, Gwynn, and Teeter. They discussed the use of methods, both quantitative and qualitative, for credible evidence. As with measurement, methods must be used to collect evidence that fits the needs deemed as credible by stakeholders. Research methods are required in most graduate and some undergraduate programs that prepare Extension professionals. The press for credible and actionable evidence makes understanding and mastery of these approaches a necessity for all Extension professionals. Measurement and method issues in regard to collecting evidence, and more importantly, credible evidence, is not just creating and implementing a survey. Thought must go into what we are trying to measure, how we collect that evidence, and for whom the evidence is being collected. We must be deliberate and focused.
In the papers by Marczak et al. and Place et al., the concept of credible evidence was discussed across Extension program areas and amongst the various stakeholders within Extension. Both of these papers discussed the vast challenges facing Extension with regard to credible evidence and meeting stakeholder needs. Making evidence trustworthy and relevant across a wide range of programs and contexts begins with understanding why and how programs and evaluations are conducted and what, how, and why stakeholders will understand those programs and the evaluations that follow. At best, making program development, implementation, and evaluation more transparent for Extension professionals will clarify program and evaluation reasoning. Anticipating and knowing the needs of stakeholders and investing more in collaborative planning and analysis with decision makers will help Extension professionals become more credible and actionable into the future.

Closely connected to these articles was the paper on telling your story by Craig and Borger. Communication strategies to improve credibility were discussed, along with highlighting the use of infographics. For credibility, how the story is told is an important step and one that is often diminished in importance or ignored. We too often leave data sitting on the shelf. When we do tell our story, we often try to tell everything that happened regardless of the needs of the stakeholder. Credibility begins with solid evidence but requires equally sound—and diverse—ways of “telling the story” to be useful to stakeholders. New technologies such as blogs, websites, and infographics offer more user-friendly options to reach different audiences. Before Extension can get to the right “packaging” of its evidence, it often must invest significant effort, with trial-and-error, innovation-and-resistance, aligning diverse partners to plan, program, collect and analyze data together. Credibility and actionability, even given their diverse criteria and contexts, remain critical concepts to guide Extension evaluation and communication into the future.

Finally, the paper on evaluation capacity looked at how Extension organizations can build capacity for evaluation and credible evidence. The paper highlighted strategies and models for creating knowledge, skills, and a culture of evaluation. Each of the preceding papers highlights the theme that generating credible and actionable evidence is not a spectator sport. Nor is it “someone else’s job.” The credibility of “what goes out” (e.g., evidence-based programming) and “what comes in” (e.g., high-quality evaluation data) depends principally on each Extension professional’s evaluative thinking and doing. For individuals, programs, and systems, this requires continuous and creative investments in building Extension professionals’ capacities at all stages in the evaluative cycle. There are a multitude of strategies for improving capacity and credibility, but only one good time to start doing something: today.
Dilemmas and Challenges Facing Extension

“We're blind to our blindness. We have very little idea of how little we know. We're not designed to know how little we know.”

—Daniel Kahneman (2011)

Psychologist Daniel Kahneman explored many dimensions of human judgment and decision-making, including human propensity to substitute intuition or bias for reasoned conclusions. He noted tendencies, even among experts, for making faulty observations and using inconsistent reasoning, and for explaining either the wealth or dearth of evidence as supportive of their theory. His work (Kahneman, 2011), in part, inspired the summary we offered in the introductory article of this special issue and gives us pause in closing to consider the challenges of credible evidence.

Credible evidence is not implicit in Extension work. What “makes sense” in Extension practice may be a product of habit or an improvement on the process. Business analysts Jeffrey Pfeffer and Robert Sutton (2006) examined the emerging concept of evidence-based practice and noted that studies in medicine, where the concept began, found that physicians followed evidence-based practice about 15% of the time. Was this because they retained old habits not quite up to current research standards or because the wisdom of experience guided them beyond particular procedures to the best interest of the patient? Reflecting on those patterns, how do we, as Extension professionals, know and use our evidence base? When we depart from a curriculum guide or practice standard, do we enhance outcomes or conveniently maintain our routine? Alternatively, do our clientele listen to us because we have research-based information or because we have a long history of service?

Not all areas of Extension work have the same breadth and depth of research to guide practice. In some cases, traditional practices may be assumed to be sufficient evidence of “what works.” Credibility needs a referent, an indicator (Rockwell & Bennett, 2004), and a process for evaluating programs against that criterion. Extension professionals can then develop a theory of change (Weiss, 1997), especially one that is sensitive to the complexity of learning objectives and settings (Douthwaite & Hoffecker, 2017). However, sometimes research evidence is not as reliable as was thought (Cohen, 1990), more nuanced and complex (Fry et al., 2016; McNamara, 2015; Mitloehner, 2016), and requires a change of theory.

Credible evidence is not always easy to attain. Scientific discoveries, program applications, and gathering of evaluative evidence take time, money, expertise, and, sometimes, just the right conditions. In some cases, precision is critical, as in measuring toxic particles-per-million in water quality or vaccination dosage. In other settings, accurate though not exact estimates of dollars saved due to energy efficiency or conservation practice may be acceptable. Behavior change may be a leader- or sponsor-valued priority for a Master Gardener program but may not
be a goal for all participants. In fact, among participants who value behavior change, goals may include growing a healthy, sustainable garden as well as saving money on food, eating healthy and losing weight, expanding social networks, or increasing community service. Evidence of program impact Extension programs such as 4-H clubs is generally greater when long-term involvement and outcomes are measured. However, where participation is inconsistent, program quality may be the best proxy for potential benefit (Arnold & Cater, 2015).

Credible evidence is increasingly difficult to attain in a complex, fast-moving environment. Yet across most disciplines, innovation for getting products and services to market and problem-solving responses to changing conditions is increasingly necessary for remaining competitive or sustainable. Smarter use of technology may be part of the picture (Milla, Lorenzo, & Brown, 2005), but changes in human systems are likely a larger part (Boteler, 2007; Warren, 2018). Extension is and has been a critical catalyst for technology transfer, but perhaps is most effective as a promoter of process skills (e.g., facilitation, teamwork, leadership, problem solving, communication skills) and community ownership (Colasanti, Wright, & Reau, 2009). What program participants learn about taking perspective, thinking critically and creatively, engaging in collaborative problem solving, and evaluating the outcomes may be more valuable and transferable than any specific solution or product produced in an Extension program.

Credible evidence is not universally acclaimed. Diversity in credibility criteria is not simply a matter of personal tastes and opinions. Evidence viewed from short- or long-term perspectives may seem more or less credible. Not all stakeholders, or evaluators for that matter, are equally capable of discerning credible evidence (Miller, 2015) and are likely to approach evidence from different social inquiry paradigms (Christie & Fleischer, 2015). Different disciplines take different approaches (Moon & Blackman, 2014) and, as shown in the Place et al. article in this special issue, criteria for evidence varies from the federal to the local level. Although these different perspectives may impede or delay consensus on evidence, they may actually enhance breadth and depth for understanding complex evidence.

So how do Extension professionals deal with these dilemmas? First, by seeking to understand issues of credibility and actionability, becoming evaluative thinkers. Second, by becoming “catalysts for critical reflection,” listening empathically but encouraging citizens and partners to question assumptions and strategies, sometimes to overturn them but often to devise more actionable solutions. Finally, to become a “community of practice,” sharing problems needing evidence and effective approaches that are appropriate for a wide range of stakeholders.

**Final Thoughts**

What can you do to examine the credibility of evidence that informs your program or evidence that represents your program? What are you doing to help stakeholders understand and embrace higher standards for credible evidence? How do you need to interpret the same program evidence to different stakeholders? In how many ways, or with how many different groups or
projects can you apply evidence? How have you been challenged to learn new ways of gathering evidence?

Although much of this issue has focused on credibility, we must not forget about actionable evidence. Actionable evidence refers to that evidence which can be used to make decisions, including in the areas of policy and programming (Julnes & Rog, 2015, p. 221). How will you use the evidence collected? How do the stakeholders plan to use the evidence collected? If we do not consider how the results will be used, programming and evaluation just does not work. We encourage you to not over-complicate the process. Be innovative on how to use measures and methods. Don’t waste your efforts, and most importantly, don’t collect evidence that won’t be used.

We hope you have enjoyed this special issue of the JHSE about credible and actionable evidence. Let’s look back at where we began and ended the opening article.

• “I know I am making a difference,” a confident young county Extension agent declares. “Our nutrition education program served 4,500 people last year.” “OK,” the county director replies, “So, how many of those participants and their families are eating healthy meals or saving money on food or medical bills?

• “I know I am making a difference,” explains an experienced field crop Extension agent, “Producers are implementing conservation practices, trying drought-resistant varieties, and recognizing early-on when they have disease problems.” “Great,” replies a state Extension specialist, “But did producers “check off” those items on a list, or describe what they actually do? Have you been in the field with them to observe these changes?”

• “I know I am making a difference,” an Extension program leader notes. “Three counties with long-standing financial management programs saw an increase of ten percent in families becoming self-sufficient. In three counties where there was never an interest in those programs, at least five participating families became self-sufficient and recommended the program to their friends.”

• “I know I am making a difference,” an Extension volunteer youth leader insists, “Our programs teach life skills, so they will be productive citizens in the future.” An interested county commissioner replies, “What exactly are those skills, and how do you know it is your program that turns youth into productive citizens?”

Using the information and insight from the articles in this special issue, how would you now work to provide credible and actionable evidence to address these issues? What measures and methods would be needed? How would you determine if these are the right kinds of credible and actionable evidence to be used to tell Extension’s story?
The next steps are ours. There is no one-size-fits-all answer to the topic of credible and actionable evidence. Different stakeholders will have different expectations for credibility. Different disciplines and different issues within a discipline will require different measures and methods. Organizations will have different levels of resources and support to address these issues. Finally, there are also different expectations at all levels within the Extension organization.

The bar for collecting and using credible and actionable evidence has now been raised. Let us all set a goal to meet and exceed this new challenge.

References


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