



# Evaluation capacity building in the nonformal education context: Challenges and strategies



Anil Kumar Chaudhary<sup>a,\*</sup>, John Diaz<sup>b</sup>, K.S.U. Jayaratne<sup>c</sup>, Elsie Assan<sup>d</sup>

<sup>a</sup> The Pennsylvania State University, Department of Agricultural Economics, Sociology, and Education, 209C Ferguson Building, University Park, PA, 16802, USA

<sup>b</sup> University of Florida, Department of Agricultural Education and Communication, 1200 N Park Road, Plant City, FL, 33563, USA

<sup>c</sup> North Carolina State University, Department of Agricultural and Human Sciences, 200 Ricks Hall, Raleigh, NC, 27695 - 7607, USA

<sup>d</sup> The Pennsylvania State University, Department of Agricultural Economics, Sociology and Education, 012 Ferguson Building, University Park, PA, 16802, USA

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## ABSTRACT

Policymakers' demand for increased accountability has compelled organizations to pay more attention to internal evaluation capacity building (ECB). The existing literature about ECB has focused on capacity building experiences and organizational research, with limited attention on challenges that internal evaluation specialists face in building organizational evaluative capacity. To address this knowledge gap, we conducted a Delphi study with evaluation specialists in the United States' Cooperative Extension Service and developed a consensus on the most pervasive ECB challenges as well as the most useful strategies for overcoming ECB challenges. Challenges identified in this study include limited time and resources, limited understanding of the value of evaluation, evaluation considered as an afterthought, and limited support and buy-in from administrators. Alternatively, strategies found in the study include a shift in an organizational culture where evaluation is appreciated, buy-in and support from administration, clarifying the importance of quality than quantity of evaluations, and a strategic approach to ECB. The challenges identified in this study have persisted for decades, meaning administrators must understand the persistence of these issues and make an earnest investment (financial and human resource) to make noticeable progress. The Delphi approach can be used more often to prioritize ECB efforts.

## 1. Introduction

The increased need to provide credible evidence to policymakers and the accountability demands from governmental agencies and non-governmental organizations that fund social and developmental programs sparked the expansion of the program evaluation field in recent decades (Boyce & McGowan, 2019; Boyle, Lemaire, & Rist, 1999; Carleton-Hug & Hug, 2010; Chouinard, 2013; Head, 2016; Rodgers, Hillaker, Haas, & Peters, 2012). Nonformal educational organizations (e.g., Cooperative Extension Service in the United States, foundations, and non-governmental organizations), which receive funding for programs from multiple agencies are continuously facing increased pressure to show evidence of their impact (Carleton-Hug & Hug, 2010; Chouinard, 2013; Franz & Townson, 2008; Guion, Boyd, & Rennekamp, 2007; Head, 2016; Nichols, Blake, Chazdon, & Radhakrishna, 2015; SeEVERS & Graham, 2012). These demands resulted in the increased need for well-trained program evaluators (Boyce & McGowan, 2019; National Academies Press, 2010). Traditionally, organizations brought external evaluators to conduct their evaluations due to the limited

internal capacity to carry out robust evaluations (Carman & Fredericks, 2010; Naccarella et al., 2007; Preskill & Boyle, 2008b). It may be argued that bringing in external evaluators is not the best approach for organizations, as "external evaluators do not always have a full understanding of the given service or program and do not adequately capture what is going on" (Naccarella et al., 2007, p. 231). Considering this criticism, it makes sense for organizations to conduct internal evaluations, but one may question whether there is adequate organizational capacity (Naccarella et al., 2007) to conduct meaningful evaluations. As a result, organizations are compelled to develop their internal capacity to carry out evaluations (Naccarella et al., 2007; Stevenson, Florin, Mill, & Andrade, 2002).

The process of evaluation capacity building (ECB) continues to receive more attention as organizations strive to enhance evaluative understanding among organizational stakeholders and enhance evaluation practice and culture among organizations (Boyle et al., 1999; Compton, Baizerman, & Stockdill, 2002; Labin, Duffy, Meyers, Wandersman, & Lesesne, 2012). Even though ECB has been well discussed in the literature for more than a decade, the meaning or definition of ECB is still

\* Corresponding author.

E-mail addresses: [auk259@psu.edu](mailto:auk259@psu.edu) (A. Kumar Chaudhary), [john.diaz@ufl.edu](mailto:john.diaz@ufl.edu) (J. Diaz), [Jay\\_jayaratne@ncsu.edu](mailto:Jay_jayaratne@ncsu.edu) (K.S.U. Jayaratne), [eza6@psu.edu](mailto:eza6@psu.edu) (E. Assan).

not clear (Fleming & Easton, 2010; Labin et al., 2012; Naccarella et al., 2007; Norton, Milat, Edwards, & Giffin, 2016; Preskill & Boyle, 2008b, 2008b; Stockdill, Baizerman, & Compton, 2002). Most definitions differentiate ECB from someone's ability to actually conduct an evaluation (Labin et al., 2012). Among ECB definitions, some specifically consider ECB as an organization level activity (Stockdill et al., 2002), while others focus on evaluation capacity building at both individual and organization level (Labin et al., 2012; Preskill & Boyle, 2008b; Taylor-Powell & Boyd, 2008; Naccarella et al., 2007). Most researchers "agree that ECB is about building the knowledge, skills, and attitudes of organization members; the sustainability of professional evaluation practice; and providing the resources and motivations to engage in ongoing evaluation work" (Preskill & Boyle, 2008b, p.149). Naccarella et al. (2007) synthesis of ECB literature found a common thread among different definitions as "equipping staff within organizations with the appropriate skills to conduct rigorous evaluations, and doing so in a manner that acknowledges the local context and ensures that such evaluations become part of routine practice" (p. 232). Using most recent synthesis of ECB literature, Labin et al. (2012) proposed "evaluation capacity building (ECB) is an intentional process to increase individual motivation, knowledge, and skills, and to enhance a group or organization's ability to conduct or use evaluation" (p. 308). With these definitions of ECB, organizations need to invest in both individual and organizational levels to develop evaluation capacity. However, internal evaluation specialists in organizations responsible for ECB come from different professional disciplines with diverse evaluation training that encounter challenges with different organizational policies and culture (Boyce & McGowan, 2019; Christie, 2003). The review of the literature highlights the significance of exploring the challenges and strategies of internal evaluation capacity building.

### 1.1. Challenges related to evaluation capacity building

The available literature on ECB identifies a variety of challenges faced by internal evaluation initiatives (e.g., organizational culture, organizational leadership support). A meta-narrative review of 21 publications focusing on ECB models, strategies, and frameworks, identified a lack of time and financial support, unavailable research and evaluation infrastructure, employee turnover, institutional resistance to evaluation, variation in staff knowledge and skills related to basic evaluation practices, lack of staff support or buy-in as some of the constraints that hinder the successful implementation of the ECB process (Norton et al., 2016). According to Hudib et al. (2016), organizational hierarchy is a formidable challenge to the ECB processes. Specifically, they indicated that hierarchical relations affect the ECB process when cultural norms and beliefs among employees play a significant role in how people in the organization perform their duties. Alternatively, Naccarella et al. (2007) identified several challenges that stem from the organizational perception of evaluation. This foundational issue was also found by Kegeles, Rebchook, and Tebbetts (2005) who highlight how negative attitudes towards evaluation affect ECB processes. The aforementioned perception issues were found to manifest in difficulties of designing appropriate evaluations including evaluation tools, data collection and analysis, lack of clarity about program goals and funding, and varying levels of employee evaluation proficiency (Kegeles et al., 2005).

The literature also outlines the role that organizational size plays on ECB efficacy. Pejsa (2011) posits that in smaller organizations, limited resources to support evaluation training may impede ECB efforts, specifically compensation for evaluation specialists. On the other hand, in large, complex organizations, Huffman, Lawrenz, Thomas, and Clarkson (2006) found that fiscal and time constraints could affect the evaluation capacity training efforts. Similarly, King (2002) found, when reflecting on her own ECB efforts within a large organization, that the number of supervisory teams that were engaged in ECB presented a challenge for coordination that was confounded through the difficulties

that arose in accessing information across various departments and hierarchical levels of the organization. Additionally, time allocation for different ECB sessions influenced the number of topics discussed during training and the structure of job responsibilities affected the sustained participation in the ECB sessions (King, 2002).

Organizational leadership and evaluation culture are important contextual factors for the success of ECB efforts in organizations. Carleton-Hug and Hug (2010) reported that a lack of evaluation culture in some institutions affected participation in and administration of ECB programs. Taut (2007) highlighted how the lack of organizational support negatively affects the overall success of ECB and the use of evaluation skills by employees. Taut (2007) found that field-level employees marginally use evaluation because they believe that their administrators have limited buy-in for ECB and rarely use evaluation results in decision-making. Further, Lennie (2005) found that the lack of clarity and confusion about ECB, lack of understanding among participants about how the ECB outcomes addressed their evaluation competency needs, and lack of champions or advocates for the ECB process as additional challenges.

### 1.2. Strategies to overcome challenges of evaluation capacity building

Khan (1998) reviewed monitoring and evaluation systems in developing countries and suggested that the success of ECB efforts depends upon visible benefits of evaluation, continuous political backing, supporting institutional infrastructure with sufficient feedback system, and available support for staff training including logistics. On the other hand, King and Volkov (2005) stressed the need for supportive leadership for the success of ECB efforts and argued that success is contingent on organizational interest in and demand for evaluation. They also explained that interest and demand for evaluation must be coupled with a generally supportive internal evaluation culture where employees and management exhibit increased intentions to learn from the process and demonstrate an appreciation for the role of ECB for improving employee performance (King & Volkov, 2005). According to Kegeles et al. (2005) qualitative study of community-based organizations, funders and technical assistance providers identified strategies such as buy-in from all levels of an organization, an evaluation champion from higher administration, and clear understanding on importance and use of evaluation findings. Norton et al. (2016) summarized "common elements for successful evaluation capacity building (ECB) include: a tailored strategy based on needs assessment, an organizational commitment to evaluation and ECB, experiential learning, training with a practical element, and some form of ongoing technical support within the workplace" (p. 1). Overall, evaluation favored organizational culture, supportive organizational leadership, the familiarity of ECB specialists with organizational processes and job responsibilities of employees, and clear messages about the purpose of ECB efforts can promote successful implementation of ECB efforts in organizations.

### 1.3. Current study

Although ECB has been discussed in the literature for more than a decade, ECB research and practice remain in the infancy stage and need further exploration to promote the successful implementation of ECB in organizations (Preskill & Boyle, 2008a; Norton et al., 2016). Taking this situation into account, Preskill (2014), challenged ECB research scholars to focus on "the hard stuff" of ECB practice and research such as evaluation of ECB activities. Similarly, Suarez-Balcazar and Taylor-Ritzler (2014) called for putting more focus on conditions and context in which ECB activities are delivered. The research related to most of the ECB challenges and strategies focused on the synthesis of the literature, reflection of ECB experiences or organizational research, but limited research exists using a ground-up approach to systematically understand the ECB challenges of internal organizational evaluation

specialists. Considering calls from eminent scholars to conduct research to further expand the ECB scholarship, we conducted a systematic inquiry with evaluation specialists in the Cooperative Extension Service (CES) in the United States (U.S.). The CES is a university-based non-formal community education organization operating in all 50 states in the U.S. and can be considered as the largest non-formal educational organization in the world. There are similarities and differences in CES across states. Due to these reasons, we selected the CES as a representative organization for ECB of nonformal education organizations. Exploring the ECB process in CES is useful to better understand ECB challenges and supporting strategies applicable to nonformal education organizations. The specific research questions guided this study are described below:

Research question 1: What are the challenges faced by evaluation specialists in a non-formal education organization to ensure their success related to ECB?

Research question 2: What are the strategies that evaluation specialists consider important to overcome ECB challenges they face?

## 2. Methodology

### 2.1. Context of the study

To address our research questions, we conducted a Delphi study with a national panel of evaluation specialists who are responsible for ECB efforts in the CES of the U.S. The CES is the outreach organization of land-grant universities across the United States and they provide research-based information from land-grant universities to address societal issues faced by diverse stakeholders (e.g., homeowners, youth, farmers, businesses) in the community via non-formal educational programs (Seevers & Graham, 2012). CES started as a result of the Smith-Lever Act of 1914, functioning based on cooperative funding from federal, state, and local governments. Each CES is tasked with serving the whole state and typically use local offices across the state to serve its residents. Local needs are addressed via non-formal educational programs delivered by the Extension educators of CES (Seevers & Graham, 2012). Extension educators are hired based on their subject matter expertise with a limited skill set in program development and evaluation. They have multiple responsibilities including relationship building, assessing community needs, designing and delivering of educational programs, evaluation of educational programs, and finally reporting to federal, state, and local funding agencies (Chazdon, Horntvedt, & Templin, 2016; Lekies & Bennett, 2011; Seevers & Graham, 2012). Most of the ECB efforts in CES are directed towards Extension educators. To develop the evaluation capacity of Extension educators, most CESs have hired one or multiple evaluation specialists who deliver statewide ECB training along with providing evaluation technical support.

We specifically selected the evaluation specialists serving in the CES because of their active role in ongoing ECB efforts across CES in the U.S. Additionally, the CES has specific characteristics that extend to larger non-formal educational contexts (Franz & Townson, 2008; Rogers, 1992). Many nonformal education organizations delivering need-based, grassroots level programs related to community development, agriculture and natural resource management follow educational tenets of CES. Examples include extension services in other countries, developmental organizations (e.g., United Nations, World Bank), foundations

(e.g., Catholic Relief Services, Bill & Melinda Gates Foundation), and non-governmental organizations. Considering CES as the study context for ECB, the results of the study may have wider applicability to broader non-formal educational organizations.

### 2.2. Selection of Delphi study panel

To create a panel of evaluation specialists working within the CES at land-grant universities, we began by securing a list of evaluation specialists from the Extension Education Evaluation Topical Interest Group of the American Evaluation Association. We also accessed the websites of land grant universities in each state to identify the evaluation specialist(s) for their respective CES. The research team continuously engaged in a discussion to identify the expert panel to ensure it represented the complete CES in the U.S. Since each state did not employ an evaluation specialist, our final roster of 46 evaluation specialists with an average of 12 years of experience represented 31 states.

### 2.3. Delphi study: design, data collection, and data analysis

We used a three-round modified Delphi technique. The Delphi technique is advantageous as compared to other group consensus methods because it allows the researchers to establish a systematic process to achieve consensus through a series of questionnaires among a systematically selected expert panel for an issue that is relevant to a specific audience dispersed across a large geographic area (Cheng & King, 2017; Warner, 2015; Warner, Stubbs, Murphrey, & Huynh, 2016). Additionally, the Delphi technique addresses the pitfalls of traditional consensus-building methods (Hsu & Sandford, 2007) and widely used across multiple contexts including non-formal education (Warner, 2015; Warner et al., 2016). The Delphi technique uses an iterative query process where the selected panel in the beginning round of the Delphi study develops a comprehensive list of items that guide the further rounds of the Delphi study. Usually, three to four iterative rounds are used in the Delphi study to develop a consensus among panelists (Hsu & Sandford, 2007). Upon [University] institutional board approval for research with human subjects, we collected data during summer and fall of 2018.

In the three rounds of Delphi study, we used online surveys that were developed based on tailored design principles suggested by Dillman, Smyth, and Christian (2014) and reviewed by a panel of experts in program evaluation, human resource development, and survey methodology to establish face and content validity. To enhance participation, prior to the start of the study, one of the research team members personally called all 46 evaluation specialists to explain study objectives and secure their willingness to participate in our study. Our pre-study phone calls served as boosters for participants and helped us receive up to a 96 % response rate across all rounds of the Delphi study.

During the first round of the Delphi study, we provided panelists with two open-ended questions related to challenges and strategies (see Table 1).

We used the constant comparative method to analyze the responses where emerging themes were constantly compared with each other to develop final themes (Glaser & Strauss, 1967; Lincoln & Guba, 1985). The authors used a three-step approach for data analysis, wherein the first round one author read all responses line-by-line and provided temporary names to preliminary themes and conducted recoding until

**Table 1**

Two open-ended questions provided to panelists, i.e., evaluation specialists during the first round of Delphi study.

Question	Text
1	Please list all of the challenges that you face in developing the competencies of Extension agents in generally enhancing the effectiveness of Extension as a collective for evaluating their educational programs
2	What do you consider as strategies or alternatives to overcome the aforementioned challenges

well-defined challenges and strategies themes were identified. Later, individual themes were further examined to find any relationship with other themes or sub-themes. Upon completion of relationship checking and re-categorization, the author created an excel spreadsheet to be reviewed by other authors and an external Extension evaluation reviewer. The purpose of reviews by additional authors and an external evaluator was to confirm final themes along with additional opportunities for further merging or re-categorization. Based on agreement from all coders, final themes to be used during the second round of Delphi study were identified. With a 96 % ( $n = 44$ ) response rate during the first round, 71 unique challenges and 62 unique strategies were identified.

In the second round of the Delphi study, we provided panelists with the 71 challenges and 62 strategies that came from the first round. We asked them to rate the importance of addressing each challenge for the success of their ECB efforts and the usefulness of each strategy to address evaluation challenges. The importance of addressing each challenge was recorded on a five-point Likert-type scale (1 = Extremely important, 2 = Very important, 3 = Moderately important, 4 = Slightly important, 5 = Not at all important), whereas strategies were recorded on a seven-point Likert scale (1 = Extremely useful, 2 = Moderately useful, 3 = Slightly useful, 4 = Neither useful nor useless, 5 = Slightly useless, 6 = Moderately useless, 7 = Extremely useless). In addition to themes identified from round one, in round two we provided an open-ended item for panelists to provide additional challenges and strategies that they felt were missing from the list. To screen challenges and strategies, we used *a priori* consensus definition where two-third of panelists selecting extremely important and very important for challenges and extremely useful and moderately useful for strategies were retained for review in the third round (Boyd, 2003; Warner et al., 2016). Using our *a priori* consensus definition with a 93 % ( $n = 43$ ) response rate, 25 challenges were retained to be used in the third round, while 29 strategies were retained. Open-ended response provided one additional strategy during the second round, so in total 30 strategies were moved further to the third round.

In the third and final round, we asked panelists to rate their level of agreement with the round 2 results that the 25 challenges were the most important to address and the 30 strategies were the most useful to overcome the ECB challenges. We used a seven-point Likert scale of agreement (1 = Strongly agree, 2 = Agree, 3 = Somewhat agree, 4 = Neither agree nor disagree, 5 = Somewhat disagree, 6 = Disagree, 7 = Strongly disagree). This round used a similar *a priori* consensus definition where consensus is reached when two-thirds of panelists selected strongly agree or agree for addressing the challenges and the usefulness of strategies. The third round represented an opportunity for panelists to reflect on round 2 challenges and strategies and suggest any changes in their perspective from round two to round three (Hsu & Sandford, 2007). With a 96 % ( $n = 44$ ) response rate, in the final round, panelists agreed upon 7 challenges and 23 strategies.

### 3. Results

#### 3.1. Evaluation capacity building challenges identified by evaluation specialists

Based on a priori consensus rule in the final round (i.e., third) of our Delphi study, the panel of evaluation specialists identified seven challenges (see Table 2) that they consider are critical to ensure the success of the ECB among non-formal educators (i.e., Extension educators). Over 70 % of the panelists either agreed or strongly agreed about addressing the following ECB challenges: (a) Building capacity among a very large group of educators with limited time, limited resources and competing demands, (b) Evaluation specialists are asked for help at the last minute and sometime after data are collected, (c) Lack of time and competing demands among Extension educators, (d) Evaluation being approached as an afterthought rather than being integrated into the

programmatic process, and (e) Insufficient budget, financial resources to facilitate systematic evaluation and evaluation capacity building.

#### 3.2. Strategies to overcome evaluation capacity building challenges faced by evaluation specialists

In the final round, Delphi panelists identified 23 strategies (see Table 3) that they consider are most useful to overcome their ECB challenges. Over 83 % of panelists either agreed or strongly agreed that the following strategies can be used to overcome above discussed ECB challenges: (a) hiring Extension evaluation specialists who understand the context of Extension, (b) leadership serve as program champions for evaluation, (c) applied, hands-on program evaluation training that makes connection to the trainee's actual program, (d) more effective onboarding that includes program design and evaluation for new Extension professionals, (e) allocation of additional resources to support evaluation capacity building, (f) remove expectation or the misconception that everything has to be evaluated to get credit for programming efforts.

### 4. Discussion

We systematically explored the unique ECB challenges faced by evaluation specialists in a non-formal education organization (i.e., CES) to further expand ECB research. Additionally, we researched to determine possible strategies useful to mitigate ECB challenges. We found that building capacity among a very large group of educators with limited time, limited resources, and competing demands is the greatest challenge. This challenge is closely related to two other challenges identified. First, it is closely related to "lack of time and competing demands among Extension educators." Because of competing demands, Extension educators do not have adequate time to devote to ECB activities. Second, it is closely related to "Extension administration priorities result in lack of support, investment, and buy-in for evaluation." Lack of Extension administration buy-in for evaluation makes it harder for receiving adequate resources and giving priority for ECB over other tasks in the organization. These challenges align with a large body of ECB literature (Norton et al., 2016; Fleming & Easton, 2010; Lennie, 2005; Huffman et al., 2006; King, 2002; Naccarella et al., 2007).

The challenges of limited time and resources can be addressed using the strategies found in our study that are aligned with literature (Kegeles et al., 2005; Norton et al., 2016). These strategies include addressing the misconception among non-formal educators that everything has to be evaluated, allocating adequate resources (e.g., budget and staff) for ECB, and assigning necessary support staff with expertise in data analysis and reporting to assist evaluation specialists. Linking evaluations with relevant technologies (e.g., existing question bank stored in a Qualtrics platform) can offset time and resource constraints. Additionally, conveying a clear message to non-formal educators that their focus should be on evaluation quality rather than volume. This way Educators will be able to prioritize evaluations based on the significance of their educational programs without wasting time evaluating less important educational activities. Finally, time and resource constraints can be addressed by designing effective onboarding programs for new non-formal educators that focus specifically on program development and evaluation skills. The learning from initial onboarding sessions can be sustained using continued in-service training and creation of a peer learning network where non-formal educators can share with each other lessons learned and best practices from different evaluation projects. The peer learning network enhances the capacity of ECB efforts and promotes evaluation champions, who can serve as evaluation resource persons for local programming teams to assist with the evaluation needs of their collaborating projects.

The next major challenge faced by evaluation specialists is the tragedy of commons where evaluation is considered as an afterthought by educators. For example, educators typically think about evaluation at

**Table 2**

The List of Challenges Experienced by Evaluation Specialists During Evaluation Capacity Building (ECB) of Non-formal Educators (i.e. Extension Educators) as Retained during the Third and Final Round of Delphi Study.

Sr. No.	ECB Challenges	% selected Strongly Agree or Agree
1	Building capacity among a very large group of educators with limited time, limited resources and competing demands	82
2	Evaluation specialists are asked for help at the last minute and sometime after data are collected	74
3	Lack of time and competing demands among Extension educators	71
4	Evaluation being approached as an afterthought rather than being integrated into the programmatic process	71
5	Insufficient budget, financial resources to facilitate systematic evaluation and evaluation capacity building	71
6	Lack of understanding the value of evaluation to program improvement	66
7	Extension administration priorities result in lack of support, investment, and buy-in for evaluation	66

**Table 3**

The List of Strategies Suggested by Evaluation Specialists to Overcome Non-formal Educators (i.e. Extension Educators) Evaluation Capacity Building (ECB) Challenges as Retained during the Third and Final Round of Delphi Study.

Sr. No.	Strategies to Overcome ECB Challenges	% selected Strongly Agree or Agree
1	Hiring Extension evaluation specialists who understand the context of Extension	90
2	Leadership serve as program champions for evaluation	87
3	Applied, hands on program evaluation training that makes a connection to the trainee's actual program	87
4	More effective onboarding that includes program design and evaluation for new Extension professionals	84
5	Allocation of additional resources to support evaluation capacity building	84
6	Remove expectation or the misconception that everything has to be evaluated to get credit for programming efforts	84
7	Identify Extension agents and specialists who can serve as evaluation champions to help others with evaluation	81
8	Share the evaluation results of successful projects that used evaluation to achieve success and securing funding and recognition	81
9	Focus on evaluation capacity building with small groups allowing for discussion and integration of applied training	79
10	Create a peer learning network where Extension educators share best practices and lessons learned for evaluation	78
11	Developing systems to recognize and reward quality evaluation efforts among educators	78
12	Provide evaluation training to administrators	78
13	Provide ongoing/regular training for educators in program evaluation	78
14	Extension administration must provide a clear message of their expectations	78
15	Provide training and access to data for the development of needs and asset assessment	78
16	Have a state evaluation specialist	76
17	Promote a focus on evaluation quality and removing the expectations on evaluation volume	76
18	Work with agents/educators on evaluation activities so they don't have the pressure to do it all themselves	76
19	Providing educators with an evaluation package (i.e. tools, models, etc.) for a particular project within training on utilization	75
20	Changing the mindset toward evaluation by helping agents see its value for personal purposes and program improvement through training	73
21	More support staff with a background in data analysis and reporting who report directly to the Evaluation specialist	71
22	Promote a culture shift from the one size fits all idea of evaluation	71
23	Providing the needed technologies to help with evaluation	68

the end of the program and seek assistance from evaluation specialists after data are collected rather than asking at the planning phase. This challenge resonates with some issues identified in the literature such as resistance to evaluation efforts at the institutional level (Norton et al., 2016), negative perception of evaluation among organizational members (Naccarella et al., 2007), and a lack of evaluation culture at the organization level (Carleton-Hug & Hug, 2010). The lack of institutional evaluation culture explains why our study panelists were challenged by the lack of paying attention to evaluation at the program planning state. The strategies found in our study have implications for addressing this challenge. For example, more systematic onboarding training as stated in strategy number four can be used to emphasize the need for designing evaluation as an integral part of the program at the planning stage. Additionally, providing clear expectations from administrators, making access to an evaluation package, and showcasing the value of evaluation will create an organizational context to facilitate ECB process. Past literature on ECB challenges (Carleton-Hug & Hug, 2010; Naccarella et al., 2007; Norton et al., 2016) and strategies also suggests that there is a clear need for a shift in organizational culture where evaluation is valued and appreciated (Hudib et al., 2016; Khan, 1998; King & Volkov, 2005) and the need for organizations' commitment to using evaluation findings (Kegeles et al., 2005; Norton et al., 2016).

Nonformal educators' lack of knowledge about the use of evaluation information for program improvement and management is a considerable hindrance to ECB. Evaluation specialists are challenged when non-formal educators do not understand the value of evaluation and how to

use it in program improvement. This challenge aligns with the ECB reflection effort of Hudib et al. (2016) where they found that beliefs of employees regarding the value of evaluation findings affect how they use and pursue ECB efforts. Kegeles et al. (2005) found the negative attitude of employees towards evaluation as a hindrance to ECB in community-based organizations. The negative attitude towards evaluation may lead the people who are the target audience of ECB efforts to question the value of evaluation and avoid active participation in ECB efforts. This situation is a real barrier to ECB efforts in organizations. The possible strategies identified in this study to overcome this challenge include shifting the mindset of non-formal educators that evaluation leads to program improvement and their professional growth. Both benefits can be used to develop a positive attitude towards evaluation and create an intrinsic motivation to actively participate in ECB programs. The evaluation value challenge can be further addressed by sharing the successful evaluation case studies with non-formal educators where evaluation resulted in project improvement and increased funding. Many times, educators are unable to appreciate evaluation due to the lack of contextual and personal connection. Finding solutions to this is including ECB activities that are applied and hands-on where educators can relate training with their programs. Evaluation can be further valued by developing an organizational culture where quality evaluations are rewarded. Incentives and rewards can promote a high-level of educator engagement in evaluation efforts (Lamm, 2011), which later makes educators perceive the value offered by evaluation. Further, the value of evaluation can be enhanced when the administrators send a clear message regarding the need for evaluation

and how the evaluation results will be used in the organizational decision-making process. Finally, another strategy found in the current study was providing educators with access to an evaluation package (i.e. tools, models, etc.), so that they can learn how to analyze data and use evaluation results for making programmatic decisions, marketing, and advocacy. All strategies from the current study to address value of evaluation challenge were briefly summarized in literature as the shift in organizational culture and support from leadership where evaluation is valued and used (Hudib et al., 2016; Khan, 1998; King & Volkov, 2005).

The ECB challenge of limited support and buy-in from administrators aligns with the findings of multiple studies (Carleton-Hug & Hug, 2010; Hudib et al., 2016; Norton et al., 2016; Taut, 2007). Lack of administrative and organizational support is a major challenge to the appreciation of evaluation and ECB efforts, which our panelists agreed can be addressed by educating administrators on evaluation and further motivating leadership to serve as champions of evaluation. Previous literature also suggests similar strategies such as supportive leadership for ECB activities in the organization (King & Volkov, 2005), buy-in of evaluation at different administrative levels of the organization (Kegeles et al., 2005), organizational commitment to evaluation and ECB (Norton et al., 2016), and evaluation supportive organizational culture (Khan, 1998).

Table 4 provides a summary of the above discussion and a strategic framework that is useful in finding ways to address each of the seven challenges identified in this study. There are multiple literature sources devoted to identifying ECB challenges and strategies to overcome those challenges. However, none of the literature linked ECB challenges to

specific strategies. Our study, documented the challenges and strategies of ECB similar to those discussed in multiple literature sources (e.g., Hudib et al., 2016; Khan, 1998; King & Volkov, 2005; Naccarella et al., 2007), and provides a unique framework (see Table 4) elaborating what specific strategies are available to overcome each of the identified ECB challenges. ECB professionals can use this table as a framework to identify specific strategies to overcome the ECB challenges they are facing in their organizations.

Additional strategies from the current study also provide ideas useful for successful ECB efforts. For example, hiring evaluation specialists at the organizational level who understand the context of the organization. Contextual understanding is very important because an understanding of local context enhances the development of ECB activities that are relevant to the organizational context and promote rigorous evaluations in an organization (Naccarella et al., 2007). Their local contextual understanding can be further used when evaluation specialists conduct ECB tailored trainings in a small group setting, where they not only learn about contextual challenges but also allows in-depth discussion, understanding individual issues, and provide feedback which promotes learning from the ECB training. Conducting ECB trainings in a small group also promotes a peer network of educators where network members can mutually support each other when planning evaluations. ECB specialists need to develop and share evaluation learning materials, questionnaires, and models that not only enhance the learning during training but also provide necessary resources that educators can use in planning and conducting evaluations. The burden of evaluation can be minimized by shifting the organizational culture from the idea of one size fits all for all evaluations to

**Table 4**

A framework for matching strategies useful in meeting each of the seven Evaluation Capacity Building (ECB) challenges identified by Evaluation Specialists.

ECB Challenges	ECB Strategies
<p><b>Time and Resources</b></p> <ul style="list-style-type: none"> <li>● Building capacity among a very large group of educators with limited time, limited resources and competing demands</li> <li>● Lack of time and competing demands among Extension educators</li> <li>● Insufficient budgeted, financial resources to facilitate systematic evaluation and evaluation capacity building</li> </ul>	<ul style="list-style-type: none"> <li>● Remove expectation or the misconception that everything has to be evaluated to get credit for programming efforts</li> <li>● Allocation of additional resources to support evaluation capacity building</li> <li>● More support staff with a background in data analysis and reporting who report directly to the Evaluation specialist</li> <li>● Providing the needed technologies to help with evaluation</li> <li>● Promote a focus on evaluation quality and removing the expectations on evaluation volume</li> <li>● More effective onboarding that includes program design and evaluation for new Extension professionals</li> <li>● Provide ongoing/regular training for educators in program evaluation</li> <li>● Create a peer learning network where Extension educators share best practices and lessons learned for evaluation</li> <li>● Identify Extension agents and specialists who can serve as evaluation champions to help others with evaluation</li> </ul>
<p><b>Evaluation as Afterthought</b></p> <ul style="list-style-type: none"> <li>● Evaluation being approached as an afterthought rather than being integrated into the programmatic process</li> <li>● Evaluation specialists are asked for help at the last minute and sometime after data are collected</li> </ul>	
<p><b>Value of Evaluation</b></p> <ul style="list-style-type: none"> <li>● Lack of understanding the value of evaluation to program improvement</li> </ul>	
<p><b>Administrative Support</b></p> <ul style="list-style-type: none"> <li>● Extension administration priorities result in lack of support, investment, and buy-in for evaluation</li> </ul>	

specific contextual differences among different evaluations where educators can learn about specific evaluation methods that are contextually relevant to different programs they are involved with.

## 5. Conclusions

We conducted a Delphi study with evaluation specialists representing state Cooperative Extension Systems (a non-formal educational organization) in the U.S. to understand unique challenges faced by evaluation specialists during their ECB efforts and possible strategies to overcome those challenges. The major challenges faced by evaluation specialists were related to limited time and resources, limited understanding of the value of evaluation that may lead to evaluation considered as an afterthought, and limited support and buy-in from administrators. Any strategy to overcome these challenges requires a shift in the organizational culture where evaluation is appreciated and supported by organizational leadership. The organizational leadership should support and champion evaluation by conveying a clear message regarding their expectations and making non-formal educators focus on quality than quantity of evaluations. This cultural shift enhances the value proposition for evaluation that it is for the program and personal improvement and can contribute to improving future funding and visibility of program outcomes. Continued research is needed to address the concerns of the growing field of ECB that can provide the foundation for the successful planning and implementation of ECB efforts in non-formal educational organizations.

## 6. Lessons learned

We learned two major lessons in our study. First, many professionals responsible for ECB of organizations are scratching the surface with an intent to address all challenges affecting their ECB efforts, but considering the paradigm where we want to skim the surface on several issues, it is very important to prioritize our efforts to make a tangible improvement in ECB work. The Delphi technique used in this study can answer the question of prioritization, where the Delphi study provides a framework to identify priority challenges and strategic alternatives for making progress on the most pervasive challenges. Nonformal educational organizations can learn from prioritized challenges and strategies found in this Delphi study for planning their ECB efforts. Additionally, these organizations may be able to replicate the study for determining the unique challenges and alternatives pertaining to their organizational contexts. The second lesson we learned from this study was that the ECB challenges we found resonate with ECB challenges found in studies conducted two-decades ago. This highlights why these challenges still persist even after continued ECB research and development work for many years. We believe, if administrators want to create an organization that has internal evaluation capacity, they need to take an earnest look at these challenges and make an investment (both financial and human resources) to make noticeable progress. Understanding of unique challenges of ECB specialists along with an understanding of organizational contexts can be used to steer their organizations where evaluation is appreciated by shifting in organizational culture and embracing the value of evaluation efforts. To create a favorable organizational culture supporting evaluation, there needs to have a candid conversation about evaluation across different organizational levels. This includes training educators as well as administrators so that they understand the value of evaluation, have clear expectations for their employees and become evaluation champions.

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## Declaration of Competing Interest

The authors declare that they have no known competing financial interests or personal relationships that could have appeared to influence the work reported in this paper.

## References

- Boyce, A. S., & McGowan, B. L. (2019). An exploration of two novice evaluation educators' experiences developing and implementing introduction to evaluation courses. *The American Journal of Evaluation*, 40(1), 119–136. <https://doi.org/10.1177/1098214018778812>.
- Boyd, B. L. (2003). Identifying competencies for volunteer administrators for the coming decade: A national Delphi study. *Journal of Agricultural Education*, 44(4), 47–56. <https://doi.org/10.5032/jae.2003.04047>.
- Boyle, R., Lemaire, D., & Rist, R. C. (1999). Introduction: Building evaluation capacity. In R. Boyle, & D. Lemaire (Eds.). *Building effective evaluation capacity: Lessons from practice* (pp. 1–22). New Brunswick, N.J: Transaction Publishers.
- Carleton-Hug, A., & Hug, J. W. (2010). Challenges and opportunities for evaluating environmental education programs. *Evaluation and Program Planning*, 33(2), 159–164. <https://doi.org/10.1016/j.evalprogplan.2009.07.005>.
- Carman, J. G., & Fredericks, K. A. (2010). Evaluation capacity and nonprofit organizations: Is the glass half-empty or half-full? *The American Journal of Evaluation*, 31(1), 84–104. <https://doi.org/10.1177/1098214009352361>.
- Chazdon, S., Hornsveld, J., & Templin, E. (2016). From knowledge to action: Tips for encouraging and measuring program-related behavior change. *Journal of Extension*, 54(2), Article 2TOT1. Retrieved from <http://www.joe.org/joe/2016april/t1.php>.
- Cheng, S. H., & King, J. A. (2017). Exploring organizational evaluation capacity and evaluation capacity building: A Delphi study of Taiwanese elementary and junior high schools. *The American Journal of Evaluation*, 38(4), 521–539. <https://doi.org/10.1177/1098214016672344>.
- Chouinard, J. A. (2013). The case for participatory evaluation in an era of accountability. *The American Journal of Evaluation*, 34(2), 237–253. <https://doi.org/10.1177/1098214013478142>.
- Christie, C. (2003). What guides evaluation? A study of how evaluation practice maps onto evaluation theory. *New Directions for Evaluation*, 97, 7–35. <https://doi.org/10.1002/ev.72>.
- Compton, D. W., Baizerman, M., & Stockdill, S. H. (2002). Special issue: The art, craft, and science of evaluation capacity building. *New Directions for Evaluation*, 93, 1–120.
- Dillman, D. A., Smyth, J. D., & Christian, L. M. (2014). *Internet, phone, mail, and mixed-method surveys: The tailored design method*. Boston, MA: John Wiley.
- Fleming, M. L., & Easton, J. (2010). Building environmental educators' evaluation capacity through distance education. *Evaluation and Program Planning*, 33(2), 172–177. <https://doi.org/10.1016/j.evalprogplan.2009.07.007>.
- Franz, N., & Townson, L. (2008). The nature of complex organizations: The case of cooperative extension. In M. T. Braverman, M. Engle, M. E. Arnold, & R. A. Rennekamp (Eds.). *Program evaluation in a complex organizational system: Lessons from cooperative extension* (pp. 5–14). San Francisco, CA: Jossey-Bass. <https://doi.org/10.1002/ev.272>
- New Directions for Evaluation, 2008(120).
- Glaser, B. G., & Strauss, A. L. (1967). *The discovery of grounded theory: Strategies for qualitative research*. New York: Aldine De Gruyter.
- Guion, L., Boyd, H., & Rennekamp, R. (2007). An exploratory profile of Extension evaluation professionals. *Journal of Extension*, 45(4), Article 4FEA5. Retrieved from <http://www.joe.org/joe/2007august/a5p.shtml>.
- Head, B. W. (2016). Toward more "evidence-informed" policy making? *Public Administration Review*, 76(3), 472–484.
- Hsu, C. C., & Sandford, B. A. (2007). The Delphi technique: Making sense of consensus. *Practical Assessment, Research & Evaluation*, 12(10), 1–8. Retrieved from <https://pareonline.net/pdf/v12n10.pdf>.
- Hudib, H., Al, B., Cousins, J., Oza, J., Lakshminarayana, U., & Bhat, V. D. (2016). A cross-cultural evaluation conversation in India: Benefits, challenges, and lessons learned. *Canadian Journal of Program Evaluation*, 30(3), 329–343. <https://doi.org/10.3138/cjpe.30.3.06>.
- Huffman, D., Lawrenz, F., Thomas, K., & Clarkson, L. (2006). Collaborative evaluation communities in urban schools: A model of evaluation capacity building for STEM education. *New Directions for Evaluation*, 109, 73–85. <https://doi.org/10.1002/ev.179>.
- Kegeles, S. M., Rebhook, G. M., & Tebbets, S. (2005). Challenges and facilitators to building program evaluation capacity among community-based organizations. *AIDS Education and Prevention*, 17(4), 284–299.
- Khan, M. A. (1998). Evaluation capacity building: An overview of current status, issues and options. *Evaluation*, 4(3), 310–328.
- King, J. A. (2002). Building the evaluation capacity of a school district. *New Directions for Evaluation*, 2002(93), 63–80. <https://doi.org/10.1002/ev.42>.
- King, J. A., & Volkov, B. (2005). A framework for building evaluation capacity based on the experiences of three organizations. *CURA Reporter*, 35(3), 10–16. Retrieved from <http://www.cura.umn.edu/sites/cura.advantagelabs.com/files/publications/35-3-King-Volkov.pdf>.
- Labin, S. N., Duffy, J. L., Meyers, D. C., Wandersman, A., & Lesesne, C. A. (2012). A research synthesis of the evaluation capacity building literature. *The American Journal of Evaluation*, 33(3), 307–338.
- Lekies, K. S., & Bennett, A. M. (2011). The evaluation attitudes and practices of 4-H educators. *Journal of Extension*, 49(1), Article 1R1B1. Retrieved from <http://www.joe.org>.

- org/joe/2011february/rb2.php.
- Lamm, A. J. (2011). *Effect of organizational context on extension evaluation behaviors (doctoral dissertation)*. Gainesville, FL: University of Florida.
- Lennie, J. (2005). An evaluation capacity-building process for sustainable community IT initiatives: Empowering and disempowering impacts. *Evaluation*, 11(4), 390–414. <https://doi.org/10.1177/1356389005059382>.
- Lincoln, Y. S., & Guba, E. G. (1985). *Naturalistic inquiry*. Beverly Hills, CA: Sage.
- Naccarella, L., Pirkis, J., Kohn, F., Morley, B., Burgess, P., & Blashki, G. (2007). Building evaluation capacity: Definitional and practical implications from an Australian case study. *Evaluation and Program Planning*, 30(3), 231–236. <https://doi.org/10.1016/j.evalprogplan.2007.05.001>.
- National Academies Press (2010). *Rising above the gathering storm, revisited: Rapidly approaching category 5*. Retrieved from [http://www.nap.edu/catalog.php?record\\_id%412999](http://www.nap.edu/catalog.php?record_id%412999).
- Nichols, A., Blake, S. M., Chazdon, S., & Radhakrishna, R. R. (2015). From farm results demonstrations to multistate impact designs: Cooperative Extension navigates its way through evaluation pathways. *Journal of Human Sciences and Extension*, 3(2), Retrieved from [http://media.wix.com/ugd/c8fe6e\\_08876484b56c48a89119ecfe76c9b335.pdf](http://media.wix.com/ugd/c8fe6e_08876484b56c48a89119ecfe76c9b335.pdf).
- Norton, S., Milat, A., Edwards, B., & Giffin, M. (2016). Narrative review of strategies by organizations for building evaluation capacity. *Evaluation and Program Planning*, 58, 1–19. <https://doi.org/10.1016/j.evalprogplan.2016.04.004>.
- Pejsa, L. J. (2011). *Improving Evaluation in the nonprofit sector: The Promise of Evaluation Capacity Building for Nonprofit social service organizations in an age of accountability*. Dissertation. University of Minnesota.
- Preskill, H. (2014). Now for the hard stuff: Next steps in ECB research and practice. *The American Journal of Evaluation*, 35(1), 116–119. <https://doi.org/10.1177/1098214013499439>.
- Preskill, H., & Boyle, S. (2008b). A multidisciplinary model of evaluation capacity building. *The American Journal of Evaluation*, 29(4), 443–459. <https://doi.org/10.1177/1098214008324182>.
- Preskill, H., & Boyle, S. (2008a). Insights into evaluation capacity building: Motivations, strategies, outcomes, and lessons learned. *Canadian Journal of Program Evaluation*, 23(3), 147.
- Rogers, E. M. (1992). Prospectus for a cooperative extension system in education. *Science Communication*, 13(3), 248–255.
- Rodgers, M., Hillaker, B., Haas, B., & Peters, C. (2012). Taxonomy for assessing evaluation competencies in extension. *Journal of Extension*, 50(4), Retrieved from <http://www.joe.org/joe/2012august/a2.php>.
- Seevers, B., & Graham, D. (2012). *Education through cooperative extension* (3rd ed.). Fayetteville, AR: University of Arkansas.
- Stockdill, S. H., Baizerman, M., & Compton, D. W. (2002). Toward a definition of the ecb process: A conversation with the ECB literature. *New Directions for Evaluation*, 93, 7–25.
- Stevenson, J. F., Florin, P., Mill, D. S., & Andrade, M. (2002). Building evaluation capacity in human service organisations: A case study. *Evaluation and Program Planning*, 25(3), 233–243. [https://doi.org/10.1016/S0149-7189\(02\)00018-6](https://doi.org/10.1016/S0149-7189(02)00018-6).
- Suarez-Balcazar, Y., & Taylor-Ritzler, T. (2014). Moving from science to practice in evaluation capacity building. *The American Journal of Evaluation*, 35(1), 95–99. <https://doi.org/10.1177/1098214013499440>.
- Taut, S. (2007). Studying self-evaluation capacity building in a large international development organization. *The American Journal of Evaluation*, 28(1), 45–59. <https://doi.org/10.1177/1098214006296430>.
- Taylor-Powell, E., & Boyd, H. H. (2008). Evaluation capacity building in complex organizations. In M. T. Braverman, M. Engle, M. E. Arnold, & R. A. Rennekamp (Vol. Eds.), *Program evaluation in a complex organizational system: Lessons from cooperative extension*. *New directions for evaluation*: 120, (pp. 55–69).
- Warner, L. A. (2015). *Using the Delphi technique to achieve consensus: A tool for guiding extension programs*. Retrieved from <http://edis.ifas.ufl.edu/wc183>.
- Warner, L. A., Stubbs, E., Murphrey, T. P., & Huynh, P. (2016). Identification of the competencies needed to apply social marketing to extension programming: Results of a delphi study. *Journal of Agricultural Education*, 57(2), 14–32.
- Dr. Anil Kumar Chaudhary** is an Assistant Professor in the Department of Agricultural Economics, Sociology, and Education at the Pennsylvania State University. In this capacity, he teaches program evaluation, basic and advanced statistics, and introduction of agricultural and extension education courses. His current research focuses on two major research areas: application of program evaluation and assessment principles to formal and non-formal educational settings and human dimensions of natural resources management. For research on the application of evaluation and assessment principles, Dr. Kumar Chaudhary focuses on evaluation capacity building (ECB), identification of effective and innovative evaluation approaches to assess the impact of programs in both formal and non-formal settings, and application of social network analysis (SNA) to agriculture-related disciplines. For ECB, he focuses on approaches to strengthen the individual and institutional capacity of non-formal and formal educators to systematically evaluate their educational programs.
- Dr. John Diaz** is an Assistant Professor and Extension Specialist at the University of Florida. His Extension program primarily focuses on competency building in program development and evaluation.
- Dr. K. S. U. Jayaratne**, Ph. D., is a professor in the Department of Agricultural and Human Sciences and the State Leader for Extension Evaluation at North Carolina State University, Raleigh, NC. In this capacity, he teaches program planning, program evaluation, research methods, and international agriculture graduate courses and provides the program evaluation leadership to North Carolina Extension faculty. His research interests are on extension program planning, evaluation, and international agriculture.
- Mrs. Elsie Assan** is a Ph.D. student and Graduate Research Assistant at the Agricultural and Extension Education program at the Pennsylvania State University. Her research interests are in the human dimensions of natural resources management with an emphasis on farmer conservation practices adoption decisions, program evaluation, and competencies for extension professionals.