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Expanding evaluator competency research: Exploring competencies for program evaluation using the context of non-formal education

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ABSTRACT

The overlap of competencies between general program evaluation and specific contexts or content will always be reality because evaluators may need unique competencies to answer evaluation questions for particular contexts or content areas. Limited research exists that explores the essential competencies required by professionals who use evaluation as one part of their job portfolio, which leaves unanswered questions regarding the applicability of current evaluator competency models in such settings. We used a modified three-round Delphi technique to identify evaluator competencies for non-formal educators in Cooperative Extension (CE). Our panelists identified 36 competencies in the non-formal educational programming context for CE educators that they considered important to be included in evaluation capacity building efforts. We categorized our 36 identified competencies from the Delphi study into the five competency domains proposed by the American Evaluation Association. Our findings provide information to help guide professional development among non-formal educators related to program evaluation.

1. Introduction

Since its emergence in the 1960s (Fitzpatrick, Sanders, & Worthen, 2004), program evaluation has been slowly approaching the status of a profession (Davidson, 2002; King, Stevahn, Ghere, & Minnema, 2001; Patton, 1990; Stufflebeam & Shinkfield, 2007; Worthen, 1994). To fully mature as a profession, there needs to be a process for determining the necessary knowledge and skills of evaluators, which is at the center of international discourse among various evaluation societies (Wilcox & King, 2014). A set of accepted core competencies is the *sine qua non* for a profession that guides performance appraisal (Stevahn, King, Ghere, & Minnema, 2006; Worthen, 1999).

Aside from research on evaluation, evaluators typically focus on answering evaluation questions related to specific content (e.g., natural resource management) in a specific context (e.g., public universities or a specific location or country) (King & Stevahn, 2015). Accordingly, King and Stevahn (2015) assert that specific program evaluator competencies exist both in the general paradigm of program evaluation as well as related to a specific context or content area (Fig. 1). The question is "could evaluation professionals representing diverse evaluator backgrounds, roles, contexts, approaches, and so on across the field reach agreement on a proposed taxonomy of essential competencies for evaluators?" (Stevahn & King, 2014, p. 145). Even in light of the American Evaluation Association's recent release of the 2018 evaluator competencies, it is still challenging to agree upon a common set of competencies that applies to all professionals who employ evaluation partially in their work (King & Stevahn, 2015; Stevahn & King, 2014; Wilcox & King, 2014). The overlap of competencies between general program evaluation and content or context will always be reality because evaluators may need unique competencies to answer evaluation questions for a specific context or content area (Fig. 1).

Wilcox (2012) explored this overlap through interviews of experienced evaluators from various sectors, including government, non-profits, education, and public health during the initial validation of the Essential Competencies for Program Evaluators (ECPE) (Stevahn, King, Ghere, & Minnema, 2005). She found that the role of evaluators from public health and non-profit organizations (internal versus external) played a bigger emphasis in distinguishing evaluator competencies compared to the specific content areas represented; evaluators from the educational field considered themselves a distinct field regardless of what role they played (King & Stevahn, 2015). Considering the importance of content area and context, King and Stevahn (2015) noted that "the evaluation field, however, has not yet attended to the question of whether and, if so, how evaluator competencies should address

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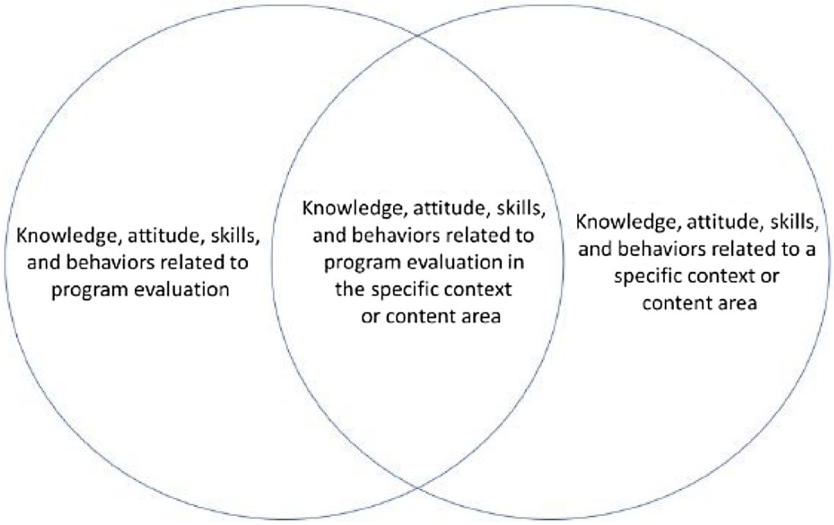

Fig. 1. Overlap of knowledge, attitude, skills, and behaviors related to program evaluation and specific context or program area. Adapted from King & Stevahn (2015).

subject-specific content" (p. 24). Even though various evaluation professional organizations across different countries have developed and adopted multiple competency models (American Evaluation Association, 2018; Canadian Evaluation Society, 2010; International Board of Standards for Training, Performance and Instruction, 2006; International Development Evaluation Association (IDEAS) Working Group on Evaluation Competencies, 2012; King et al., 2001; Morra Imas, 2010; Stevahn et al., 2005; Wehipeihana, Bailey, Davidson, & McKegg, 2014; Zorzi, Perrin, McGuire, Long, & Lee, 2002), a need persists for evaluator competency models that consider different contexts and content areas (King & Stevahn, 2015).

A second research need exists because the majority of evaluator competency research focuses on professionals whose primary responsibility is evaluation (Canadian Evaluation Society, 2010; Stevahn et al., 2005). The limited research (i.e., McClure, Fuhrman, & Morgan, 2012; Rodgers, Hillaker, Haas, & Peters, 2012) exploring the essential competencies required by professionals who use evaluation as one part of their job portfolio leaves unanswered questions regarding the applicability of current evaluator competency models to these part-time evaluators as well as their attendance to the specifics of context or content area (Froncek, Mazziotta, Piper, & Rohmann, 2018; King & Stevahn, 2015). The questions of applicability of the evaluator competency models to specific context and content for non-formal education–the focus of this paper–are: (a) is it feasible and practical for non-formal educators to develop all of the competencies in the existing models with their job responsibilities in addition to evaluation, and (b) what are the core program evaluator competencies needed for non-formal educators that align with their full job portfolio without compromising the efficacy and rigor of their program evaluation efforts? To answer these questions specific to evaluation in the non-formal education setting, we conducted a national Delphi study with a panel of Extension evaluation specialists who provide professional development and support to non-formal educators of the Cooperative Extension (CE) in the United States of America (U.S.A.).

1.1. The need to develop a set of evaluator competencies for non-formal educators

In recent decades, government agencies and non-governmental organizations that support social programs have held funded organizations accountable for demonstrating public value (Bakken, Núñez, & Couture, 2014). Traditionally, these organizations would rely on external evaluators to meet this requirement due to inadequate internal evaluation capacity necessary for effective program evaluations (Carman & Fredericks, 2010; Preskill & Boyle, 2010). Recently, many of these organizations have elected to develop evaluator competencies among their employees (i.e., internal evaluators) to more effectively satisfy accountability demands, attain extramural funding, and satisfy the desire for better formative feedback (Bakken, Nunez, & Couture, 2014).

According to Bakken et al. (2014), organizations that develop their internal capacity for evaluation experience a cultural shift that results in the increased appreciation of the evaluation process and use of results in decision making. It can also result in the development and delivery of high-quality programs to meet public needs. Multiple studies (Galport & Azzam, 2017; Ghere, King, Stevahn, & Minnema, 2016; McGuire & Zorzi, 2005) explain that to build the competencies of internal evaluators to conduct robust evaluations, it is important to identify an essential set of competencies that informs their professional development (i.e., in-service training). Additionally, these identified competencies can serve as a basis for restructuring academic training programs as well as for redefining pre-service training program requirements (Galport & Azzam, 2017; Ghere et al., 2006; McGuire & Zorzi, 2005). These needed competencies are important to understand competency deficiencies and build the capacity for quality evaluations among internal evaluators in the field of non-formal education (Lamm, Israel, & Diehl, 2013; McGuire & Zorzi, 2005).

1.2. An overview of evaluator competency development

Competence is a broad concept that defines how capable a person is to complete a task (Wilcox & King, 2014). For this study, competence is linked to the knowledge, attitudes, skills, and behaviors that allow an individual to perform tasks of a specific occupation (Weinert, 2001; Wilcox & King, 2014). In contrast, competency is a more practical term that describes specific knowledge, attitudes, skills, and behaviors that allow an individual to perform a day job, e.g., evaluation of programs (Wilcox & King, 2014). Evaluator competencies "are defined as the essential knowledge, skills, and dispositions that evaluators need to conduct program evaluations effectively" (Ghere et al., 2006, p. 109).

Over the last four decades, many evaluators conducting research on evaluation have proposed competency development frameworks (e.g., Kirkhart, 1981; Mertens, 1994; Patton, 1990; Scriven, 1996). Evaluation professional societies in North America also took an active role to further refine evaluation practice (Wilcox & King, 2014). After the formation of the American Evaluation Association (AEA) in 1986, the

AEA board formulated a task force to develop a draft of guiding principles for evaluators, rather than specific competencies. This resulted in five general principles to guide evaluators in the performance of their duties (American Evaluation Association, 1995): systematic inquiry, competence, integrity/honesty, respect for people, and responsibilities for general and public welfare (American Evaluation Association, 2004). The Canadian Evaluation Society made progress towards a competency model by creating the Essential Skills Series in Evaluation (ESS) in 1999. These efforts raised international awareness for the importance of a competency approach to human resource management to develop internal capacity for quality evaluations and the success of the emerging profession.

The limitation of these efforts towards the effective development of evaluator competency models stemmed from the predominantly theoretical nature of inquiry (Wilcox & King, 2014). According to King et al. (2001), none of the aforementioned evaluator competency models "have been derived from a systematic process or validated by empirical consensus building among diverse professionals in the field" (p. 230). It was not until the 2000's that a systematic effort was made to establish an evaluator competency framework. It was mainly driven by a group of independent university researchers in the U.S.A. and the Canadian Evaluation Society (Johnson, 2018; Wilcox & King, 2014).

In the U.S.A., Jean King and her colleagues explored what constitutes essential evaluator competencies by engaging evaluators practicing evaluation in unique fields in a Multi-Attribute Consensus Reaching process (King et al., 2001). Based on their findings, competency items were developed that were categorized into four domains. These four competency domains were: (a) systematic inquiry, (b) competent evaluation practice, (c) general skills for evaluation practice, and (d) evaluator professionalism. Stevahn et al. (2005) subsequently further refined and extended competency taxonomy proposed by King et al. (2001) and developed the Essential Competencies for Program Evaluators (ECPE), which comprised a comprehensive list of 61 competencies grouped into six distinct categories: a) professional practice, (b) systematic inquiry, (c) situational analysis, (d) project management, (e) reflective practice, and (f) interpersonal competence (Stevahn et al., 2005).

In Canada, Zorzi, McGuire, and Perrin (2002) conducted a competency development project under the aegis of the Canadian Evaluation Society (CES). This project was grounded in the ECPE and ESS, and it worked toward the development of a competency framework for the Canadian context (Johnson, 2018; Wilcox & King, 2014). The adopted CES competency taxonomy categorized evaluator competencies into five major categories: (a) reflective practice, (b) technical practice, (c) situational practice, (d) management practice, and (e) interpersonal practice (Canadian Evaluation Society, 2010; Maicher & Frank, 2015).

Other organizations outside of North America such as the Aotearoa New Zealand Evaluation Association also developed a list of competencies categorized into four interrelated domains to guide evaluation practice in Aotearoa New Zealand (Wehipeihana et al., 2014; Wilcox & King, 2014). These domains include: (a) contextual analysis and engagement, (b) systematic evaluative inquiry, (c) evaluation project management and professional evaluation practice, and (d) reflective practice and professional development (Wehipeihana et al., 2014).

Considering the efforts of independent university researchers in the U.S.A., the CES, and other evaluation societies across the world, in 2015 AEA revisited its efforts to guide the development of evaluator competencies needed for the profession and appointed a Competency Task Force (King & Stevahn, 2015). In 2018, the AEA Board approved an evaluator competencies taxonomy that categorized 49 evaluator competencies into five domains (see Table 1): (a) professional practice, (b) methodology, (c) context, (d) planning and management, and (e) interpersonal (American Evaluation Association, 2018).

Despite the availability of the existing evaluator competency taxonomies for the profession, there is a need for research to understand the evaluator competency needs of professionals such as non-formal educators working in different contexts or content areas. Most of the taxonomies were proposed based on a competency framework that encompasses all evaluators. We assert that a one-size-fits-all approach to evaluator competency development may not be helpful to all, especially to those who may be working on evaluation-related work as a secondary function or a part-time responsibility of their job profile. The purpose of this study was to develop an evaluator competency taxonomy that transcends program evaluation topics and for use in evaluation capacity building in the non-formal education context. As a result, the following research questions guided the study:

1 What are the competencies perceived important by evaluation specialists in CE who provide professional development for non-formal educators in CE where program evaluation is a secondary job responsibility?
2 How do evaluator competencies identified for a specific context and part-time evaluators compare with existing competency models?

2. Methodology

2.1. Study context

We conducted our Delphi study with a national panel of evaluation specialists working for Cooperative Extension (CE) in the U.S.A. We chose this panel to further expand the evaluator competency research under the lens of context and content area in addition to exploring how evaluator competencies may be different for part-time evaluators. CE is a non-formal education unit of land-grant universities across the United States typically located in the College of Agricultural Sciences (Seevers & Graham, 2012). Based on the Smith-Lever Act of 1914, public dollars, with money coming from local, state, and federal partners, fund CE efforts. The main function of CE is outreach or extension of research findings from land-grant universities to diverse stakeholder groups (e.g., farmers, homeowners, youths, families, businesses, school districts) (National Institute of Food & Agriculture (NIFA), n.d.; Seevers & Graham, 2012). CE is regarded as a community-based outreach organization, which addresses societal issues by translating research findings into non-formal educational programs (Mincemoyer, Perkins, & Lillehoj, 2004; Seevers & Graham, 2012). Each land-grant university has a responsibility to serve the complete state, and CE addresses the concerns of the public across the states by decentralizing its efforts through CE offices across the state (Seevers & Graham, 2012).

Extension educators carry out frontline efforts to deliver non-formal education programs based on the local needs of communities, who represent the land-grant university at the county-level (Seevers & Graham, 2012). Extension educators develop relationships with communities, identify community needs, design and deliver research-based educational programs, conduct evaluation of their programming efforts, and finally report to local, state, and federal agencies (Seevers & Graham, 2012). Extension educators are hired based on their subject-matter expertise and have limited formal training in both program development and program evaluation (Chazdon, Horntvedt, & Templin, 2016; Lekies & Bennett, 2011). There is increased pressure on extension organizations to provide evidence of public value due to a dependence on public dollars, various accountability policies (e.g., Agricultural Research, Extension and Education Reform Act of 1998, see United States Department of Agriculture (USDA), 2015), and deep budget cuts in the last two decades (Franz & Townson, 2008; Nichols, Blake, Chazdon, & Radhakrishna, 2015; Seevers & Graham, 2012). CE has long used competency models to develop knowledge and skills among extension educators. Frequently, competency models include program evaluation as a core competency domain to be developed among extension educators (Brodeur, Higgins, Galindo-Gonzalez, Craig, & Haile, 2011; Cooper & Graham, 2001; Harder, Lamm, & Strong, 2009; Harder, Place, & Scheer, 2010).

While program evaluation is a core competency domain, extension

Table 1
Program Evaluator Competency Taxonomy Endorsed by the American Evaluation Association.

Domain	Competency Statement
1.0 Professional Practice	1.1 Acts ethically through evaluation practice that demonstrates integrity and respects people from different cultural backgrounds and indigenous groups.
	1.2 Applies the foundational documents adopted by the American Evaluation Association that ground evaluation practice.
	1.3 Selects evaluation approaches and theories appropriately.
	1.4 Uses systematic evidence to make evaluative judgments.
	1.5 Reflects on evaluation formally or informally to improve practice.
	1.6 Identifies personal areas of professional competence and needs for growth.
	1.7 Pursues ongoing professional development to deepen reflective practice, stay current, and build connections.
	1.8 Identifies how evaluation practice can promote social justice and the public good.
	1.9 Advocates for the field of evaluation and its value.
2.0 Methodology	2.1 Identifies evaluation purposes and needs.
	2.2 Determines evaluation questions.
	2.3 Designs credible and feasible evaluations that address identified purposes and questions.
	2.4 Determines and justifies appropriate methods to answer evaluation questions, e.g., quantitative, qualitative, and mixed methods.
	2.5 Identifies assumptions that underlie methodologies and program logic.
	2.6 Conducts reviews of the literature when appropriate.
	2.7 Identifies relevant sources of evidence and sampling procedures.
	2.8 Involves stakeholders in designing, implementing, interpreting, and reporting evaluations as appropriate.
	2.9 Uses program logic and program theory as appropriate.
	2.10 Collects data using credible, feasible, and culturally appropriate procedures.
	2.11 Analyzes data using credible, feasible, and culturally appropriate procedures.
	2.12 Identifies strengths and limitations of the evaluation design and methods.
	2.13 Interprets findings/results in context.
	2.14 Uses evidence and interpretations to draw conclusions, making judgments and recommendations when appropriate.
3.0 Context	3.1 Responds respectfully to the uniqueness of the evaluation context.
	3.2 Engages a diverse range of users/stakeholders throughout the evaluation process.
	3.3 Describes the program, including its basic purpose, components, and its functioning in broader contexts.
	3.4 Attends to systems issues within the context.
	3.5 Communicates evaluation processes and results in timely, appropriate, and effective ways.
	3.6 Facilitates shared understanding of the program and its evaluation with stakeholders.
	3.7 Clarifies diverse perspectives, stakeholder interests, and cultural assumptions.
	3.8 Promotes evaluation use and influence in context.
4.0 Planning and Management	4.1 Negotiates and manages a feasible evaluation plan, budget, resources, and timeline.
	4.2 Addresses aspects of culture in planning and managing evaluations.
	4.3 Manages and safeguards evaluation data.
	4.4 Plans for evaluation use and influence.
	4.5 Coordinates and supervises evaluation processes and products.
	4.6 Documents evaluation processes and products.
	4.7 Teams with others when appropriate.
	4.8 Monitors evaluation progress and quality and makes adjustments when appropriate.
	4.9 Works with stakeholders to build evaluation capacity when appropriate.
	4.10 Uses technology appropriately to support and manage the evaluation.
5.0 Interpersonal	5.1 Fosters positive relationships for professional practice and evaluation use.
	5.2 Listens to understand and engage different perspectives.
	5.3 Facilitates shared decision making for evaluation.
	5.4 Builds trust throughout the evaluation.
	5.5 Attends to the ways power and privilege affect evaluation practice.
	5.6 Communicates in meaningful ways that enhance the effectiveness of the evaluation.
	5.7 Facilitates constructive and culturally responsive interaction throughout the evaluation.
	5.8 Manages conflicts constructively.

Note. This table was adapted from AEA (2018).

educators' primary responsibilities center on the development and delivery of educational programs. These professionals are expected to conduct meaningful evaluations to determine the accomplishments of their educational program objectives, allowing for data-driven programmatic improvements and the demonstration of impact. Evaluation specialists, hired by extension organizations in the U.S.A., play an important role in evaluation capacity building for extension educators by providing statewide evaluation trainings and technical support. Based on above discussion, it is clear that CE has a long history of delivering educational programs in non-formal settings and that CE educators conduct program evaluations as part of their job. Therefore, CE can be used as an appropriate platform to explore the idea of context or content related to evaluator competency research.

CE in the U.S.A. draws salient connections to the larger context of non-formal education, and it is also the largest organization that delivers non-formal adult education programs (Franz & Townson, 2008; Rogers, 1992). The organizations that use non-formal education for delivering their grassroots-level programs related to agriculture, community development, and health extension services include extension organizations across different countries, international development organizations (e.g., the U.S. Agency for International Development, Japan International Cooperation Agency, United Nations, and the World Bank), and national and international foundations (e.g., Bill & Melinda Gates Foundation, Catholic Relief Services, The Global Forum for Rural Advisory Services [GFRAS]). These organizations employ front-line educators, external evaluators, and others like program officers who are expected to conduct quality evaluations of their programs at the grassroots-level for program improvement and accountability as a part of job portfolio similar to that of CE educators. These tasks are in addition to their responsibilities of educational program development and delivery. These organizations also use tenets of the extension education approach to develop needs-based programs that are focused on improving the quality of life of its target audiences. For this reason, using CE as the study context and the results and conclusions drawn from this study may have broader applicability to the non-formal education context outside of the CE organizations.

2.2. Delphi panel

To identify the core evaluator competencies for non-formal educators (i.e., CE educators), we developed a panel of CE evaluation specialists from land-grant universities across the U.S.A. These CE evaluation specialists work with extension educators to build their evaluation capacity to assess their educational programs effectively. Evaluation specialists in CE are appropriate resources to explore required competencies of extension educators because they are the most knowledgeable group of professionals regarding the extension evaluation context and the contents in any extension organization. The panelists' regular interaction with the extension educators keeps them in tune with the educators' evaluation work needs and the program evaluation socio-political context. They are also familiar with the currently available evaluation competency research through their engagement with professional associations (i.e., AEA and CES) and their own scholarship in the field. We did not include CE supervisors because they are predominantly subject matter experts in disciplines rather than in evaluation.

To recruit a national sample of CE evaluation specialists, first, we compiled the list of evaluation specialists working for different land-grant universities using AEA's Extension Education Evaluation Topical Interest Group listserv and examining the website of different land-grant universities. We selected CE evaluation specialists in each state who were responsible for providing evaluation capacity building leadership to CE educators in the state. To ensure that an appropriate panel was selected, after compiling list of evaluation specialists, the lead author conducted solicitation calls with each of the identified panelists to gauge their involvement with program evaluation professional development in their organization. Not every land-grant university in each state has an evaluation specialist, so our sample had 46 evaluation specialists representing 31 different states. On average each specialist had 12 years of experience.

2.3. Delphi study design

We used a modified three-round Delphi technique to identify the core evaluator competencies for non-formal educators (i.e., CE educators). The study was conducted in the summer and fall of 2018 and was approved by the Institutional Review Board for Human Subjects Research at The University of Florida. We used the Delphi technique as a method for consensus-building that utilizes a series of questionnaires to collect data from a purposively selected panel of subjects across a large geographic area to achieve convergence of opinion concerning real-world knowledge (Hsu & Sandford, 2007). The technique is lauded for providing a controlled feedback process to minimize the effects of traditional discussion-based consensus building approaches and ensures that the panel is able to focus on the problem-solving exercise (Cheng & King, 2017; Warner, 2015; Warner, Stubbs, Murphrey, & Huynh, 2016). The Delphi technique also represents an iterative process where the initial phase focuses on generating an exhaustive list of items to be considered during the subsequent rounds and predicated on the panel responses from the previous rounds. Typically, Delphi studies are three to four rounds, to allow the panelists multiple iterations to reflect on the arising paradigms and provide their responses accordingly (Hsu & Sandford, 2007).

This study used a series of three online surveys, which were validated using a panel of program evaluators, survey designers, and human resource professionals. We designed the survey using the tailored design method proposed by Dillman, Smyth, and Christian (2014). Each person who agreed to participate received a copy of the first-round survey three weeks prior to launch of the study to promote thoughtful response. The panelists were asked to review and utilize existing evaluator competency models for their responses in addition to leveraging their own experience in leading evaluation capacity building work in CE.

The first round of the study, otherwise known as the generative round, was focused on developing a comprehensive list of competencies based on the competency models that exist and the panel's own experience. We used a survey with the open-ended item: "Please list all of the core program evaluator competencies that are necessary to build the evaluation capacity of Cooperative Extension educators to conduct meaningful evaluations." For this item we provided a large box to promote an in-depth and rich response from the panelists (Kumar Chaudhary & Israel, 2016). The open-ended responses from the first round were analyzed using the constant comparative method where emerging themes were constantly compared, and final themes were generated through a series of coding and recoding (Glaser & Strauss, 1967; Lincoln & Guba, 1985).

The lead author used a three-step process of analysis to categorize the items for the development of the second-round survey. First, the data were assessed line by line and coded with temporary names, then recoded, until competency categories became well-defined. Then the individual categories were examined to create relationships with other categories and subcategories. The lead author then created a spreadsheet with the data nested below the final categories for review by the other authors and another CE evaluator. The reviews centered on confirming the final themes and identifying opportunities for further merging or categorization. Upon agreement among the three authors, unique themes were identified. The first-round response rate was 96 % (n = 44). Our analysis revealed 98 unique themes, which served as an input for our round two survey. The surveys for rounds two and three of this study were also validated with the process outlined above.

The second round represented the first attempt to move the panel towards consensus. Our second-round survey asked panelists to rate the importance of developing each evaluator competency for CE educators to conduct the successful evaluation of their non-formal education programs on a five point Likert-type scale (1 = Extremely important, 2 = Very important, 3 = Moderately important, 4 = Slightly important, 5 = Not at all important). We also provided an open-ended response recording space in the second round survey as an opportunity for panelists to identify additional competencies that they felt were important to include in the third-round survey, but not represented in the second round list of competencies. To screen competencies, we used an *a priori* consensus definition of two-thirds of the panelists rating the competency as extremely important and very important (Boyd, 2003; Warner et al., 2016). Based on our *a priori* criteria and securing a 93 % (n = 43) response rate, 40 competencies were retained in round 2. In round two, the open-ended response provided one additional unique competency, so in total there were 41 competencies to be reviewed in round three.

The third and final round served as an opportunity for the panel to reflect on the results from Round 2 and portray any changes in perspective based on their responses (Hsu & Sandford, 2007). In this round, we asked panelists to review 41 competencies from round two and rate their level of agreement regarding the importance of developing each competency among CE educators to ensure the successful evaluation of their non-formal programs on a seven-point Likert-type scale (1 = Strongly agree, 2 = Agree, 3 = Somewhat agree, 4 = Neither agree nor disagree, 5 = Somewhat disagree, 6 = Disagree, 7 = Strongly disagree). For this round, we used the *a priori* definition of consensus to be two-thirds of the panelists selecting strongly agree or agree. With a 96 % (n = 44) response rate in round three, panelists agreed upon on 36 competencies.

2.4. Comparison tables analysis procedure

Prior to comparing our results with other existing competency taxonomies, we categorized our 36 identified competencies into the five competency domains used by AEA (2018). We chose the AEA model as a unifying comprehensive framework to organize the competencies of our model because the AEA model was developed by AEA's Competency Task Force consisting of experts like Jean King, Susan Tucker, Robin

Miller, Laurie Stevahn, and Donna Podems and is the latest and most robust evaluator competency model. They developed this model by reviewing foundational documents (i.e., previous models) along with open feedback through focus group interviews, surveys, and listening sessions with the broader membership of AEA. For categorization of competencies into five domains, we adapted our decision rules from Stevahn et al. (2005). First, each author individually examined each competency statement and matched it to a competency statement in each domain of the AEA evaluator competencies. For matching, we used the main intent of each item rather than tracing every word in the competency statement. Finally, we discussed our categorization to find consensus and, in case of disagreement, jointly interpreted the items and systematically assigned the statement to a specific competency domain. After categorization into the five AEA evaluation competency domains, we compared our taxonomy with the older ECPE (Stevahn et al., 2005) and the evaluator competency taxonomies proposed by the Canadian Evaluation Society (Canadian Evaluation Society, 2010) and the American Evaluation Association (American Evaluation Association, 2018). For comparison, we created tables based on the work of Stevahn and King (2014) and King and Stevahn (2015).

3. Results

3.1. Competencies identified by CE evaluation specialists

Table 2 presents the 36 competencies in the non-formal education context for CE educators that Delphi panelists identified as important to be included into evaluation capacity building efforts. These competencies represented agreement among the panelists of the core evaluator competencies necessary to develop among non-formal educators in CE to ensure the efficacy of their evaluation efforts. The five most highly rated competencies include: (a) Conduct a needs assessment that informs program development, (b) Use evaluation results to improve either an existing program or future programs, (c) Clearly articulate a program theory of change, (d) Ability to develop a logic model, and (e) Conduct culturally-responsive evaluations. These top competencies highlighted the importance of learning about evaluation planning, use of evaluation findings, and understanding the cultural context of evaluations.

When competencies were categorized into the five domains of the 2018 AEA competencies, most (67 %) of the competencies fell into the methodology domain, followed by context (11 %), planning and management (8 %), and professional practice (8 %) (see Table 3).

3.2. Comparison of identified competencies with previous competency models

We compared the ECPE taxonomy, the evaluator competencies taxonomy endorsed by the Canadian Evaluation Society, the evaluator competencies taxonomy endorsed by the American Evaluation Association, and the evaluator competencies taxonomy identified for non-formal educators in CE. The comparison among the four taxonomies suggested that even though different taxonomies had different origins/purposes, the comparison (see Table 4) shows that all four

Table 2
Evaluator Competencies Retained during the Third and Final Round of Delphi Study.

Number	Evaluator competencies	% selected Strongly Agree or Agree
1	Conduct a needs assessment that informs program development	89.8
2	Use evaluation results to improve either an existing program or future programs	89.7
3	Clearly articulate a program theory of change	87.5
4	Ability to develop a logic model	85.0
5	Conduct culturally-responsive evaluations	85.0
6	Integrate evaluative thinking throughout programming cycle	84.2
7	Differentiate between inputs, outputs, outcomes, and impacts	82.5
8	Follow best practice for ethical evaluations and human subject protection measures (i.e., IRB compliance procedures)	82.1
9	Measuring program outcomes and impacts	82.1
10	Understand the target audience for evaluation results	82.1
11	Understand how power and privilege and race and gender play into designing to analyzing evaluation data	81.6
12	Write impact statements	81.6
13	Determining how and when to collect data	80.0
14	Understand the type of evidence needed from an evaluation (based on whom the evaluation results are for)	79.5
15	Develop a program theory of action	79.0
16	How to identify what data are important for the purpose of accountability	79.0
17	Ability to identify issues or problems (i.e., issue identification)	77.5
18	Understand what programs are worth evaluating	76.9
19	Utilize evaluation results to effectively develop and disseminate tailored messages to key stakeholder groups	76.9
20	Advocate for the value of evaluation and use of evaluation findings	75.0
21	Determine key stakeholders and engage them in program development and evaluation	75.0
22	Develop a list of evaluation questions that will guide the evaluation design	75.0
23	Develop measurable objectives aligned with intended program outcomes	75.0
24	Interpretation of evaluation results to understand program's ability to meet need or solve problem	74.4
25	Utilize multiple evaluation techniques that extend beyond surveys (i.e., focus groups, interviews, observation, records review, etc.)	74.4
26	Articulate the purpose, importance, and use of evaluation	72.5
27	Effective communication skills (written and oral) to engage stakeholders	72.5
28	Identify impact indicators	71.8
29	Utilize appropriate scales of measurement	71.8
30	Specify the types of expected program outcomes	70.3
31	Develop an evaluation plan that is incorporated into the plan of work to link program development to evaluation	70.0
32	Develop appropriately framed questions/measures to effectively assess program outcomes (i.e., knowledge, behavior change, etc.) and needed improvements.	70.0
33	Differentiate the levels/types of outcomes	70.0
34	Understand data collection methods such as qualitative, quantitative, and mixed methods and select the method(s) appropriate for the program and audience.	69.2
35	Determine appropriate evaluation design and approaches for their programs	67.5
36	Develop a quality survey	67.5

Table 3
Categorization of Identified Evaluator Competencies into Five Competency Domains Published by American Evaluation Association (2018).

Domain	Competency Statement
1.0 Professional Practice	1.1 Follow best practices for ethical evaluations and human subject protection measures (i.e., IRB compliance procedures)
	1.2 Advocate for the value of evaluation and use of evaluation findings
	1.3 Integrate evaluative thinking throughout programming cycle
2.0 Methodology	2.1 Conduct a needs assessment that informs program development
	2.2 Clearly articulate a program theory of change
	2.3 Able to develop a logic model
	2.4 Differentiate between inputs, outputs, outcomes and impacts
	2.5 Able to measure program outcomes and impacts
	2.6 Able to determine how and when to collect data
	2.7 Understand the type of evidence needed from an evaluation (based on who the evaluation results are for)
	2.8 Develop a program theory of action
	2.9 How to identify what data are important for the purpose of accountability
	2.10 Ability to identify issues or problems (i.e., issue identification)
	2.11 Understand what programs are worth evaluating
	2.12 Develop a list of evaluation questions that will guide the evaluation design
	2.13 Develop measurable objectives aligned with intended program outcomes
	2.14 Interpret evaluation results to understand program's ability to meet need or solve problem
	2.15 Utilize multiple evaluation techniques that extend beyond surveys (i.e. focus groups, interviews, observation, records review, etc.)
	2.16 Identification of impact indicators
	2.17 Utilize appropriate scales of measurement
	2.18 Specify the types of expected program outcomes
	2.19 Develop appropriately framed questions/measures to effectively assess program outcomes (i.e., knowledge, behavior change, etc.) and needed improvements.
	2.20 Differentiate the levels/types of outcomes
	2.21 Understand data collection methods such as qualitative, quantitative, and mixed methods and select the method(s) appropriate for the program and audience.
	2.22 Determine appropriate evaluation design and approaches for their programs
	2.23 Develop a quality survey
	2.24 Write impact statements
3.0 Context	3.1 Conduct culturally-responsive evaluations
	3.2 Understand the target audience for evaluation results
	3.3 Understand how power and privilege and race and gender play into designing to analyzing evaluation data
	3.4 Determine key stakeholders and engage them in program development and evaluation
4.0 Planning and Management	4.1 Articulate the purpose, importance, and use of evaluation
	4.2 Use evaluation results to improve either an existing program or future programs
	4.3 Develop an evaluation plan that is incorporated into the plan of work to link program development to evaluation
5.0 Interpersonal	5.1 Utilize evaluation results to effectively develop and disseminate tailored messages to key stakeholder groups
	5.2 Effective communication skills (written and oral) to engage stakeholders

competency taxonomies fit into five domains: professional focus, technical focus, situational focus, management focus, and interpersonal focus. Through our comparison it is clear that our taxonomy includes noticeably fewer competencies in the professional, situational, and interpersonal domains. In contrast, there are more technical competencies in our taxonomy, ranging from three to nine additional items in relationship to the other models.

4. Discussion, conclusion, and recommendations

One of the first steps in ensuring the formal development of the evaluation profession is to identify a set of knowledge, skills, attitudes,

Table 4
Comparison among Multiple Selected Evaluator Competency Taxonomies for Competency Domains.

Common Core Competency Domains (similarities across taxonomies)	Essential Competencies for Program Evaluators (Stevahn et al., 2005)	Evaluator Competencies Endorsed by Canadian Evaluation Society (CES, 2010)	Evaluator Competencies Endorsed by American Evaluation Association (American Evaluation Association, 2018)	Evaluator Competencies for Non-formal Educators in CE
Professional Focus (acts ethically/ reflectively and enhances/ advances professional practice)	1.0 Professional practice (1.1–1.6) 5.0 Reflective practice (5.1–5.5)	1.0 Reflective practice (1.1–1.7)	1.0 Professional Practice (1.1–1.9)	1.0 Professional Practice (1.1–1.3)
Technical Focus (applies appropriate methodology)	2.0 Systematic inquiry (2.1–2.20)	2.0 Technical practice (2.1–2.16)	2.0 Methodology (2.1–2.14)	2.0 Methodology (2.1–2.24)
Situational Focus (considers/analyzes context Successfully)	3.0 Situational analysis (3.1–3.12)	3.0 Situational practice (3.1–3.9)	3.0 Context (3.1–3.8)	3.0 Context (3.1–3.4)
Management Focus (conducts/ manages projects skillfully)	4.0 Project management (4.1–4.12)	4.0 Management practice (4.1–4.7)	4.0 Planning & Management (4.1–4.10)	4.0 Planning & Management (4.1–4.3)
Interpersonal Focus (interacts/communicates effectively and respectfully)	6.0 Interpersonal competence (6.1–6.6)	5.0 Interpersonal practice (5.1–5.10)	5.0 Interpersonal (5.1–5.8)	5.0 Interpersonal (5.1–5.2)

Note. The numbers in parenthesis for four taxonomies exhibit specific competencies that fall into specific competency domains. This table was adapted from Stevahn and King (2014) and King and Stevahn (2015) and later adapted to expand the existing table.

Table 5
A Non-Exhaustive List of Examples of Evaluation Contexts and Contents.

Context Examples	Content Examples
Education	Reading, Science, Engineering, Math, and Art
Cooperative Extension	Agriculture, Natural Resources, Family and Consumer Sciences, and Youth Development
Health	Food, Nutrition and Wellness
Nonprofit	Food Distribution, Housing, and Childcare

and behaviors necessary to effectively carry out job responsibilities. We conducted this study to understand if the existing evaluator competency models developed for full-time evaluators could effectively address the content or context area specific needs of non-formal educators (i.e., CE educators) who conduct evaluation as one part of their job portfolio. Our findings show that there is some area of overlap as well as some clear differences. The identified competencies for non-formal educators in CE fall into all five domains identified by previous evaluator competency models, but their distribution varies. This highlights the influence that context and content (see Table 5) have on evaluator competencies of the specific professional group, which King and Stevahn (2015) asserted and requires continued consideration.

CE educators are non-formal educators, and they represent a professional group that engages in evaluation within a context where evaluation is a part of their job responsibility and needs to be balanced with their major job responsibility, which is education program development and delivery. Our study used the Delphi technique, which identified 36 core competencies that CE educators reportedly need to conduct evaluation in the non-formal education context. It provides a road map for those who develop evaluation capacity building programs for CE educators and other non-formal educators and may help to identify the necessary areas of skill development and assess this development against those areas. The new non-formal educators in CE competency model can assist to prioritize the capacity building efforts by paying more attention to the most needed areas first. Our findings align with a previous competency study that included a similar audience (Rodgers et al., 2012) and reaffirm the broad evaluator competency domains identified by American Evaluation Association (2018) and other professional associations (Canadian Evaluation Society, 2010; Stevahn et al., 2005). However, our study highlights that there is variation in the significance of some of the competencies for non-formal educators in CE.

Interestingly, our taxonomy exhibits noticeable variance, with the majority of competencies residing in the methodology domain, but we also identified competencies related to professional practice, context, planning and management, and interpersonal communication. This distribution can be attributed to the educators' background, their lack of evaluation preparation, and the expectation of acquiring the necessary methodological competency while on the job (Harder et al., 2010; Lamm et al., 2013). One must consider that these part-time evaluators typically are hired because of a specific subject matter expertise such as agriculture, health education, community development, or youth development, and they do not typically have a background or formal training in evaluation. This means that competency development is an in-service training endeavor, which the panel felt most needed to focus on evaluation methods. The Delphi panel of CE evaluation specialists understood this dynamic and the fact that these part-time evaluators have the responsibility of balancing evaluation with educational program development and delivery. This understanding is necessary for focusing on core evaluator competencies that promote evaluative effectiveness and integrate considerations of feasibility and time management with other job responsibilities.

The difference in our model may also be explained by the perceived importance of certain competencies related to the contextual differences that manifest within part-time evaluators in contrast to their full-time counterparts. For example, competencies like "train others involved in conducting the evaluation" and "contributes to the knowledge base of evaluation" may extend beyond the responsibilities of non-formal educators in CE and thus not be perceived as core competencies. Another interpretation for the competencies residing in the methodology domain is that these non-formal educators are doing evaluation as a part of their job, and they may be acquiring other competencies such as planning and management and interpersonal skills as part of their job other than evaluation, such as program design and delivery. Based on our years of experience working to train and support non-formal education professionals in program evaluation, we believe that our results provide a targeted list of competencies that will allow evaluation capacity building efforts to focus on the key areas to maintain the efficacy and rigor or program evaluation in non-formal education.

The evaluator competencies identified in this study may have broad implications beyond CE and across non-formal education settings where educators have evaluation responsibilities in addition to their curriculum development and instructional responsibilities. There are many non-governmental organizations and international development donor agencies carrying out many non-formal education programs throughout the world, and these organizations may be able to use this competency taxonomy to prioritize evaluator competencies for professionals hired as non-formal educators. Organizations like the U.S. Agency for International Development and the United Nations that use front-line educators who are also part-time evaluators can use this study to develop a strategic approach for developing evaluator competencies among their non-formal educators to complement their existing subject matter expertise. These organizations also work in collaboration with external, full-time evaluators, replicating the contextual dynamics and points of difference represented in this study (Stevenson, Florin, Mills, & Andrade, 2002).

While CE educators represent the largest group of non-formal educators in the U.S., the competencies in this study represent a practically applicable range of competencies to develop among the larger group of non-formal educators that balance multiple areas of responsibility. Our results show that these competency development efforts could focus on building competencies related to evaluation methods to match their contextual realities of everyday work. This may represent a shift in current professional development efforts that have used existing evaluator competency models for full-time evaluators and provide refined focus on those competencies that are of central importance to non-formal educators who conduct evaluation as a part of their job portfolio. By developing consensus at a national level, it may provide an opportunity for CE evaluation specialists to develop a competency checklist that they can work on in collaboration to develop evaluator competencies among non-formal educators. Together these specialists can determine the most effective evaluation capacity building strategies and increase the reach of their efforts.

Our study also provides a framework to develop an evaluator competency assessment similar to that of Rodgers et al. (2012) to measure competency development. One factor that must be considered when using this taxonomy for professional development is distinctive programmatic areas that may present unique challenges to evaluation, thus requiring specific competencies for evaluative success. One common example is evaluations of youth development and other youth-related programs. Non-formal educators working in this area may require tailored professional development efforts to build competencies to overcome special challenges, such as working with low reading level audiences presented through youth-based evaluations.

This study includes limitations that the reader must consider when making judgements of applicability in their own organizational context and content areas. The taxonomy was developed within the CE organization with conclusions extrapolated to the larger non-formal educational context. There is a rationale for extrapolation of these findings because CE represents some contextual variations and similarities across 50 states in the U.S.A., resembling organizational diversity to

some extent. In addition, it includes perceived competencies based on the views of the Extension evaluation specialists without testing the actual application of the taxonomy with front-line educators and their supervisors. This creates the opportunity to further validate our findings with a broader audience of non-formal educators and administrators across wider organizations. First, it is important to conduct a follow-up study with non-formal educators across a wide range of organizations to examine the relevance of the identified competencies to potentially refine the content and practical application of our initial taxonomy. The opportunity exists to repeat this study with another organization that provides non-formal education to the public outside of CE. The CE organization may present specific organizational factors that may influence contextual realities, so for broader applicability, this is an important next step. Finally, we recommend that future research focus on the assessment of additional factors that may influence non-formal education evaluator competencies and employer needs. For example, previous research identifies the influence of educational program content areas (i.e., youth development, agriculture, and nutrition) in evaluator competencies (Ghimire and Martin, 2013; McClure et al., 2012). We believe that additional factors may exist that influence evaluator competencies, requiring additional inquiry.

5. Lessons learned

The most significant lesson learned through this study related to the initial organization of the Delphi study, i.e., the value of the preliminary correspondence with panelists. The lead author called each of the identified evaluation specialists and discussed the study expectations prior to launch. The lead author also addressed questions from the potential panelists so that each person knew what they were getting into prior to agreeing to participate. We believe this process helped to maintain the engagement of each panelist across the approximately three hours of survey engagement and resulted in response rates we were able to achieve. We strongly recommend that planners who are trying to achieve consensus should invest in this process during participant solicitation to ensure they are able to achieve the level of engagement they desire.

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.

Appendix A. Supplementary data

Supplementary material related to this article can be found, in the online version, at doi:https://doi.org/10.1016/j.evalprogplan.2020.101790.

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