Investigating Faculty Learning in the Context of Community-Engaged Scholarship

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This study investigates faculty learning resulting from a faculty development program implemented at North Carolina State University to build capacity for community-engaged scholarship (CES). Previous work done under the auspices of Community Campus Partnerships for Health is extended by modifying an extant scale used to assess CES competencies and adding a retrospective pre-test to account for response-shift bias. This study also builds upon earlier work on assessment of student learning through the use of reflection by examining reflection products written by faculty at three points during the 12-month program. Quantitative analysis of responses to the CES competencies scale indicated a significant response-shift bias (participants overestimated their knowledge about CES at the start of the program). Qualitative investigation of participants' reflection products suggests they learned new language for CES, achieved new discoveries about their community-engaged work, and often redefined their scholarly identities through the lens of engaged scholarship. Implications of this study include the value-added by examining faculty learning through reflection products as well as self-report scales, the need to build faculty capacity for learning through reflection, and the proposal of new strategies for documenting faculty learning from faculty development programs.

Increasingly, universities and colleges are accepting, encouraging, and supporting community-engaged scholarship (CES) as legitimate faculty work (O'Meara, 2010; O'Meara & Jaeger, 2006). Despite this trend, implementing, funding, and rewarding professional development around CES remains a significant challenge for higher education institutions (Blanchard et al., 2009; O'Meara & Rice, 2005). This is particularly troubling as the practices and underlying values associated with CES – such as integrating community and university expertise, sharing responsibility and credit among all partners, and ensuring at least mutual benefit if not also mutual growth (Gass, 2008; Holland, 2004; Israel, Schulz, Parker, & Becker, 1998; Jameson, Clayton, & Jaeger, 2011; Seifer & Maurana, 2000) – are counter-normative (Clayton & Ash, 2004; Howard, 1998) to the dominant, technocratic model of engagement in higher education in which the faculty member independently defines learning outcomes, research questions, methods of inquiry, and strategies for delivery and dissemination (Saltmarsh, Hartley, & Clayton, 2009). As a result, research designs, pedagogical methods, partnership processes, and products associated with CES may well be unfamiliar both to those undertaking CES and to their peers, which in turn implies risks in terms of uncertain or low quality implementation and in terms of review and evaluation of the work for promotion and tenure (Blanchard et al., 2009).

Although there is evidence that early career faculty are entering the academy with increasing interest in and capacities for CES (Antonio, Astin, & Cress, 2000; O'Meara, 2005; O'Meara & Jaeger, 2006), learning about CES – what it involves, how to evaluate it, and principles of design – must take place at all levels of faculty rank if colleagues are to understand, support, and validate, or at least not impede, this work (Blanchard et al., 2009). One approach to such learning is faculty development activities intentionally designed to cultivate CES-related learning outcomes. The current study contributes to the field's understanding of and capacity to design and implement effective faculty development for CES by sharing a faculty development program that includes explicit CES learning outcomes and a mixed-method assessment strategy.

This study builds on significant work done by Community Campus Partnerships for Health (CCPH) to advance faculty learning about CES. Grounded in the conviction that "there are aspects of community-engaged scholarship that are necessary for all faculty to have as well as competencies and skills essential for those choosing to pursue it" (Blanchard et al., 2009, p. 60), the Community-

Engaged Scholarship for Health Collaborative was launched in 2004 by CCPH with a U.S. Department of Education Fund for the Improvement of Postsecondary Education (FIPSE) grant. The Collaborative identified competencies, skills, attitudes, and values necessary for effective CES (for more information, see Blanchard et al., 2009). They determined that general CES competencies for all members of the academy, regardless of their participation in community-engaged work, include: knowledge (e.g., definitions of CES), skills (e.g., ability to evaluate CES products), and values (e.g., respect for significance of CES). Specific competencies for faculty undertaking CES include, for example: (a) understanding concepts of community engagement and community-engaged scholarship and familiarity with basic literature and history of community-engaged scholarship and (b) ability to work effectively in and with diverse communities. Given their belief that "faculty development programs … can facilitate the development and success of potential community engaged scholars" (Blanchard et al., 2009, p. 49), CCPH continued this project through a second phase. The Faculty for the Engaged Campus (FEC) initiative developed by CCPH in collaboration with the University of North Carolina at Chapel Hill and the University of Minnesota supported the creation and piloting of innovative approaches to faculty development designed to cultivate and assess CES competencies.

The FEC initiative provided the context for the current study. North Carolina State University (NCSU) was one of six campuses awarded a grant to design and pilot new competency-based faculty development programs (for more information, see Jaeger, Jameson, & Clayton, 2012). EDGES (Education and Discovery Grounded in Engaged Scholarship) was a 12-month cohort-based learning community designed to support faculty in developing and implementing curricular- or research-based CES projects during key transition points (or edges) in their career paths. Participants included faculty and future faculty from four career stages—doctoral students, new faculty, recently-tenured faculty, and late-career faculty—who worked together through a series of professional development activities that included readings, reflection, discussion, mentoring, interactions with experienced community-engaged faculty and with national engagement scholars, and opportunities to disseminate their work. For the purposes of this program, CES was defined as scholarly activities related to teaching and research that involve reciprocal collaboration of students, community partners, and faculty as co-educators, co-learners, and co-generators of knowledge and that address questions of public concern (Jaeger et al., 2012). The learning goals of EDGES included, by way of example: understanding the foundational concepts of CES, understanding the dynamics of partnerships in CES, and understanding similarities and differences in the various conceptualizations of CES among their peers.

The current research used the assessment strategy developed for EDGES to inquire into faculty learning outcomes and the processes through which they might best be measured. Extant scales used to assess CES competencies on two of the FEC campuses (Blanchard et al., 2009; Blanchard, Strauss, & Webb, in press) were modified and used in a pre-post-then design to document participant-reported change in competencies over the course of EDGES. This dynamic whereby the frame of reference for self-assessment changes as a result of an educational intervention is referred to as response-shift bias and is a common, though not widely accounted for, confounder of assessment through pre-test/post-tests (Howard & Dailey, 1979; Sibthorp, Paisley, Gookin, & Ward, 2007).

This study also examined whether there might be value-added to assessing faculty learning by incorporating additional evidence in the form of written reflection products solicited from participants throughout the program. This study has implications for the design of future faculty development for CES and for the assessment of the learning that results from such faculty development activities.

Assessing Faculty Learning

This section provides background for this study by reviewing the CES competencies instrument designed by Blanchard et al. (2009) and piloted by Blanchard et al. (in press). Additional work on the assessment of both faculty and student learning is also presented to further develop the foundation for the research questions that guide this study.

CES Competencies Scale

The 14 CES competencies developed by CCPH provided the basis for the new faculty development programs designed as part of the FEC initiative as well as for assessing their associated outcomes. As one example, participants in UNC-Chapel Hill's Faculty Engaged Scholars Program (Blanchard et al., 2012) rated themselves at the end of the first year of the program on the 14 competencies using a six-point scale from *minimal* (a) to *complete mastery* (f). Blanchard et al. provide a descriptive, quantitative summary of participants' self-assessment ratings and indicate several patterns that emerged across the competencies in the first three years of the program, which included a total of 24 participants.

The six institutions selected to pilot innovative approaches to faculty development for CES as part of

the FEC initiative were encouraged to incorporate the CES competencies into their program design and assessment strategies. Using a modified set of outcomes and an aligned version of the competencies scale as a component of the assessment strategy in EDGES provided a basis for the first research question:

RQ1: How does modifying the CES competencies instrument and adding a retrospective pre-test contribute to the ability to document faculty learning?

Faculty Reflection

As summarized in a review by Chism, Palmer, and Price (in press), assessing the outcomes of faculty development has depended largely on participants' self-reports. In an earlier survey of 200 members of the Professional and Organizational Development Network in Higher Education, Chism and Szabo (1998) asked about the types of assessment being undertaken in faculty development. The most common tools used were participant surveys (including rating scales and open-ended questions), followed by interviews, and, occasionally, student surveys; by far the most frequent outcome evaluated was participant satisfaction.

Although self-report measures are useful as indications of perceived learning, recent work on faculty learning in service-learning and community engagement has suggested assessing faculty learning with the full range of approaches used to assess student learning in service-learning, including critical reflection (Clayton, Hess, Jaeger, Jameson, & McGuire, in press). The literature on assessing student learning in service-learning has criticized over-reliance on self-report and called for more direct evidence of learning (Bowman & Brandenberger, 2010; Eyler, 2000; Steinke & Buresh, 2002; Steinke & Fitch, 2008). Service-learning scholars have responded to this concern by examining student case studies (Mpofu, 2007), problem solving interviews (Eyler & Giles, 1999) narratives (Batchelder & Root, 1994; Steinke & Fitch, 2003), and written reflection products (Ash, Clayton, & Atkinson, 2005) for direct evidence of student learning, sometimes in conjunction with self-report instruments. In these more direct approaches, students are not asked to indicate whether they have learned nor to rate themselves on the level of their knowledge; instead, student products are examined as demonstrations of their learning – for example, for the evidence they provide of critical thinking, higher order reasoning, understanding of course concepts, or problem-solving. Bullock and Clayton (2010) describe an assessment strategy in the context of an international masters program in forestry that combines written products with self-report; students were asked to identify, explain, give examples of, analyze, and propose solutions to current and future global forestry issues as well as to rate themselves on their abilities to contribute to the resolution of those issues with six-point self-assessment items related to critical thinking, leadership, teamwork, and cross-cultural competence. Such approaches to the assessment of student learning, based at least in part on direct evidence of learning rather than self-report alone, provide a basis for ongoing refinement of approaches to assessing faculty learning through faculty development programs.

Adult learning theory confirms the central role of reflection in learning for all learners. Kreber and Cranton (2000) apply Mezirow's (1991) distinction between content reflection (which poses "what" questions), process reflection (which poses "how" questions), and premise reflection (which poses "why" questions) to faculty learning about teaching. Clayton and Ash (2005) explore the use of critical reflection as a primary mechanism for generating learning through faculty development, analogous to its use with students in service-learning. Clayton and O'Steen (2010) similarly suggest designing faculty development for service-learning such that faculty participants use and learn through the same sorts of critical reflection activities they use to generate and document their students' learning. Bringle and Hatcher (1995) and Bringle, Hatcher, Jones, and Plater (2006) apply Kolb's (1984) Experiential Learning Cycle to the design of faculty development activities, indicating an understanding of faculty development as appropriately including reflection oriented toward faculty learning and, more generally, confirming the relevance to faculty learning of models that have been most widely applied to student learning.

Clayton et al. (in press) call for research on faculty learning in the arena of service-learning and community engagement that uses approaches developed for investigating student learning, including faculty reflection and the application of rubrics to faculty-generated artifacts (e.g., syllabi, learning objectives, assignment guidelines, reflection prompts, and feedback to students as well as their own reflection products). The second research question guiding the current study of faculty learning resulting from the EDGES faculty development program partially responds to that call:

RQ2: What is the value added by integrating written reflection along with the CES competencies measure in the assessment of faculty learning?

Method

The strategy developed for assessing learning that resulted from participation in EDGES combined two methods: (a) a CES competencies scale, and (b) a series of guided reflection assignments serving as mechanisms to generate and document faculty learn-

ing. The former included items addressing the original CCPH competencies and additional items addressing the learning goals of EDGES; the latter primarily addressed the particular learning goals of EDGES. This assessment strategy is consistent with the recommendation by Eyler (2000) to combine survey tools with other sources of evidence of learning – including direct evidence – when assessing student learning in service-learning; and it embodies the conviction that learning goals, assignments/activities, and assessment ought to be well aligned (Ash & Clayton, 2009; Jameson, Clayton, & Ash, in press; Wiggins & McTighe, 1998). The intentional alignment of learning goals, activities, and assessment strategy in the design of EDGES is illustrated in Table 1.

EDGES Participants

EDGES began with 21 participants: 6 doctoral students, 7 new faculty, 4 associate professors, and 4 late-career faculty; 16 participants completed the program: 5 doctoral students, 5 new faculty, 2 associate professors, and 4 late-career faculty. Participants exited the program for diverse reasons such as lack of time (n = 2), unexpected travel requirements (n = 1), and departure from the university (n = 1); one stopped attending events but offered no explanation. EDGES participants represented diverse disciplines, backgrounds, and interests. Six participants identified themselves as community-engaged scholars from the beginning of the program, while the remaining 15 participants reported no prior knowledge of the literature on CES. The six more experienced participants had either taught with service-learning, written about community engagement, or both, whereas the others had considered doing some form of CES but were new to the practice. Before completing any of the assessments, all EDGES participants signed an informed consent form as required by North Carolina State's Institutional Review Board.

CES Competency Measure

At the time the investigators developed the competencies scale for use in the EDGES program, the University of North Carolina at Chapel Hill (UNC) and the University of Michigan (both part of the FEC initiative) had produced instruments grounded in the competencies that emerged from the CCPH work (Blanchard et al., 2009; Blanchard, personal correspondence). The version used in EDGES resulted from integrating and modifying both existing instruments. In summary, compared to the UNC CES competencies scale, 12 items were modified by splitting into multiple items or revising language, and 2 items were eliminated; compared to the University of Michigan scale, which itself had resulted from slight modification of the UNC version and had 16 items, 6 items were retained largely as written, 9 items were modified by splitting into multiple items or revising language, and 1 item was eliminated. Eight completely new items were added, in accordance with the particular learning goals of EDGES. The resultant scale used in this study (see Appendix) included a total of 25 rating items and five open items in which participants were asked to indicate and rate themselves on additional competencies they identified as important to CES. Response choices ranged from 1 (*none*) to 6 (*advanced*), with interim values of 2 (*minimal*), 3 (*basic*), 4 (*intermediate*), and 5 (*proficient*). A *not applicable* option was provided, in accordance with the University of Michigan version of the scale. The instrument was administered at the EDGES orientation session for the pre-test and online at the completion of the program for the post-test.

A limitation of the pre-test/post-test design is that participants may inaccurately assess their own competency levels before the intervention (in this case, the series of readings, workshops, reflection activities, and discussions that comprised the EDGES program). Participants having a more accurate self-appraisal of their pre-intervention status at the end of a learning process than they had at its inception has been found to occur most commonly when the goal of an intervention is to change the participants' definition of a concept and when the definition is not well established or stable (Sibthorp, Paisley, Gookin, & Ward, 2007). As these conditions were present in the EDGES program, a retrospective pre-test, called a then-test (Howard & Dailey, 1979), was used to account for potential response-shift bias.

Means were calculated for individual items at each administration and were compared to determine change between pre- and post-tests, between pre- and then-, and between then- and post-tests. Paired sample t-tests were run to test for significant changes in perceptions of CES competencies. Cronbach's alpha for the 25-item measure was .90 at pre-, .94 at post-, and .95 at then-test ratings, indicating strong internal consistency.

Written Reflection Products

In the second element of the strategy used to assess learning through the EDGES program, participants responded to three sets of reflection prompts. In each case, reflection prompts were sent to participants via email, and they were given one month to write their responses and return their reflection products via email.

Reflection Activity 1 occurred after the EDGES orientation and before the first workshop and discussion of assigned readings. Following Mezirow (1991), prompts were designed to capture partici-

Table 1
Sample Mapping of EDGES Learning Goals, Activities, and Assessment

Learning Goal	**Sample Activities**	**Sample Assessment**
Participants will understand the foundational concepts of community-engaged scholarship.	*Read:* Boyer's Scholarship of Engagement (excerpt) Saltmarsh et al.'s (2009) Democratic Engagement White Paper *Reflection prompt:* In what specific ways does Boyer's (1996) reconsideration of "scholarship" align with and challenge your understanding of your own scholarship, including but not limited to your EDGES project?	*Reflection prompt (pre/post):* How do you define community-engaged scholarship? *CES scale items (pre/post/then):* Understanding of the concepts of "community engagement" and "community-engaged scholarship"
Participants will understand the dynamics of partnerships in community-engaged scholarship.	*Read:* Saltmarsh et al.'s (2009) Democratic Engagement White Paper Hess et al.'s (2011) Perspectives on Partnership Evolution *Seminar* with members of the WakeNature Preserves Partnership *Reflection prompt:* Apply the SOFAR model to the EDGES project you are developing: Who are the individuals in your project that represent each stakeholder (each node on the diagram)?	*Reflection prompt (pre/post):* How do you define partnerships in the context of community-engaged scholarship? *CES scale items (pre/post/then):* Understanding of the conditions for and dynamics of strong partnerships in community-engaged scholarship
Participants will better understand similarities and differences in the various conceptualizations of community-engaged scholarship among their peers and will become better able to discuss their own conceptualization with others.	*Seminar* activity with Saltmarsh on pathways to community engaged scholarship *Workshop activity* collaboratively applying Venn diagram integrating teaching, research, and service to EDGES CES projects *Presentation* of EDGES CES projects under development at the poster session at the university's Celebration of an Engaged University event	*Reflection prompts (pre/post):* How do you define community engaged scholarship? On a scale of 1 (*not at all*) to 10 (*completely*) to what extent do you believe a) the other participants in EDGES and b) faculty and administrators on campus in general share your understanding and why? *CES scale items (pre/post/then):* Ability to convey clearly to others the meaning of "community engagement" and "community engaged scholarship" Ability to share my learning about community engaged scholarship effectively with other faculty

pants' understanding of the content they were learning as well as their thinking about their own learning process. Examples of reflection prompts designed for participants to demonstrate their understanding and to enable pre-/post- comparisons of this direct evidence included: "How do you define community engaged scholarship?" and "How do you define partnerships in the context of community engaged scholarship?" Examples of prompts designed for participants to report their understanding and to enable pre-/post- comparisons of this indirect evidence included: "What connections do you see between your work with students (undergraduate and/or graduate) and your community engaged scholarship? Specifically: How are these aspects of your work aligned? How are they in tension?" Examples of prompts designed to document participants' perceptions of their learning process included "What informs your understanding of community engaged scholarship?"

Reflection Activity 2 took place three months later, after participants had completed six readings and participated in two workshops. Participants were

specifically asked to analyze their own work through the lens of the readings using prompts such as: "In what specific ways does Boyer's (1996) reconsideration of 'scholarship' align with and challenge your understanding of your own scholarship, including but not limited to your EDGES project?" Participants were also asked to analyze their community-engaged scholarship in terms of an example project – the WakeNature Preserves Partnership (Hess et al., 2011) – after reading about the project and interacting with some of the partners involved in it, with the prompt: "What do you see as the most important similarities between WakeNature and the project you are developing? How does the case study of WakeNature inform the thinking you are doing about your EDGES project?"

Reflection Activity 3 was completed at the end of the year-long EDGES program and included many of the same prompts used in the first reflection activity so as to allow for pre-post examination of both direct and indirect evidence of learning. Additional prompts in the final reflection activity were designed to document reported impacts of participants' learning – for example, "In what specific ways has your teaching and/or research changed due to your participation in the EDGES learning community?" Still others were designed to explore their perceptions of changes in their understanding, including for example: "How, specifically, has your understanding of community engaged scholarship changed since you entered the EDGES learning community?" and "In what ways has your thinking about the role of [students, faculty, community partners, and institution] changed since you began the EDGES program?"

Qualitative data analysis of responses to reflection prompts used a phenomenological approach, which is based on the desire to understand how a group of participants experiences a particular phenomenon (Creswell, 2007; Donahue, Bowyer, & Rosenberg, 2003). In this case, the phenomenon of interest was faculty learning, specifically related to CES. The goal of a phenomenological approach is to understand shared experiences across individuals to "develop a deeper understanding of the features of the phenomenon" (Creswell, p. 60). Reflection responses were analyzed using a process of analytic induction that is appropriate when the goal is exploratory and descriptive (Huberman & Miles, 1994).

Three phases of the interpretive process started with a holistic analysis (Yin, 2003) in which the investigators read all of the written reflection products to get a sense of the whole case (Hatch, 2002). In this stage, one of the investigators wrote a summary of similarities and differences in participants' reflection products within and across EDGES cohorts.

The second step consisted of data reduction, during which the first author used NVivo 8 qualitative software to highlight "significant statements" explaining the phenomenon from the participants' perspectives (Creswell, 2007, p. 61). The NVivo 8 program enables the investigator to capture units of text and create categories that organize the data into themes. This process is what Moustakas (1994) calls horizonalation (as cited in Creswell, p. 61) and is similar to the open coding process described in a grounded theory approach to organizing qualitative data (Strauss & Corbin, 1990). For example, reading the participants' reflection products surfaced several comments that indicated exposure to a new way of thinking, which emerged as a category tentatively labeled "discoveries." Several reflection products also included indications of changes in participants' orientation toward their scholarly work overall; this theme was labeled "scholarly identity." The process of data reduction also includes constant comparison, as new data is compared to theory, previous categories, and new categories as they emerge. Due to the nature of Research Question 2, the investigators also examined the qualitative data in light of the CES competencies results. To increase the plausibility of the analysis (Huberman & Miles, 1994), investigators also looked for negative or disconfirming cases to reduce the risk of overgeneralization. The analytic process exemplifies what Huberman and Miles (1994) refer to as an "ongoing dialogue between ideas and evidence" (p. 433).

The third and final stage consisted of writing a composite description that further reduced the number of themes or categories into a succinct set of conclusions regarding the participants' experience with the phenomenon. Although the first author completed the qualitative analysis, emerging themes and questions were examined in collaboration with the second author along the way, and a member-check was conducted by sharing the final description with an EDGES participant (Lincoln & Guba, 1985).

Results

The purpose of this study was to investigate faculty learning using the context of the EDGES faculty development program. More specifically, the goals were to examine what could be learned from a revised CES competencies scale with the addition of a retrospective pre-test and the potential value added to quantitative measures by the use of written reflection products that demonstrated and reported learning. Significant results of the CES competencies measure are reported first, followed by results of the qualitative analysis of written reflection products.

CES Competencies Measure

The response rate for the CES competencies instrument varied slightly from the pre-test and post-test (n = 15 for both) to the then-test (n = 14), as a retrospective-pre test was not obtained from one participant.

The means for the three time periods were: pre-test = 3.43, post-test = 4.82, and then-test = 2.84. Using paired t-tests on competency ratings, significant differences were found between pre- and post-test scores, $t(14) = -5.64$, $p < .01$. Significant differences were also found between pre- and then-test scores, $t(13) = 2.21$, $p < .05$, confirming response-shift bias. Significant differences were also found between post- and then-test scores, $t(13) = 7.14$, $p < .01$; given the presence of response-shift bias, this result may provide the best indication of the amount of learning participants believe themselves to have achieved.

Reflection Activities

Participation in the reflection activities varied with each reflection task: Reflection Activity 1 (n = 20), Reflection Activity 2 (n = 17), and Reflection Activity 3 (n = 9). The data from written reflection products included 78 pages from Activity 1, 63 pages from Activity 2, and 40 pages from Activity 3, for a total of 181 pages of data. The composite description of the phenomenon of learning through the EDGES faculty development program is shared below, starting with three central themes that emerged through participants' written reflection products—(1) new language (2) surprises and new discoveries, and (3) scholarly identity—and concluding with illustrative examples of the participants' indications of concrete impacts of their learning.

New language for CES. Participants indicated in the final reflection activity that they had learned new language that had implications for their work, including providing a name for activities they had been pursuing (i.e., "CES") and providing a stronger vocabulary through which to describe their work to colleagues, document their work in dossiers, and negotiate roles with students and community partners. Table 2 illustrates how this new vocabulary often appeared in their reflection products when they were asked to provide definitions of CES in both the first and last reflection activity.

Participants also described how this new language made them aware of changes in their thinking about the concept of engagement, for example:

> My definition of community engaged scholarship is broader than it was upon joining EDGES. I was primarily viewing this type of engagement as 'service-learning' only; now my understanding has broadened to include numerous types of engagement activities. *–New Faculty*

> I have become very aware lately of the concept of democratic public scholarship … and the advantages of reciprocal relationships between partners. This will put a new lens on my proposed work as the relationships among the stakeholders will need to be examined. *–Late Career Faculty*

Table 2
Selected Responses to Reflection Prompts Illustrating Pre- and Post-EDGES Definitions of CES

Pre-EDGES Definition of CES (Reflection Activity 1)	**Post-EDGES Definition of CES (Reflection Activity 3)**
Research that involves interaction with individuals and organizations within the local area in which those participants are seen as partners rather than subjects.	Community-engaged scholarship is work done in conjunction with a community organization, typically benefitting both the scholar and the organization, and often involving students. Often initiated by the scholar, but it could also be initiated by the organization. Ideally, the relationship is one that will continue over time, but it could be for a limited time, such as until a particular goal or set of goals is reached.
As the involvement of university teacher-researcher teams with community stakeholders counterparts in addressing community issues.	The learning and dissemination of knowledge gained through the conjoint activities of university and community partners engaged in common goal setting and attainment as equal stakeholders in community-related investigations of public issues.
It is a way to integrate the scholarship of the university with interests of the community.	Working with someone or a group in the community where you add your own expertise to that of others working to solve a problem or address an issue. What makes it scholarly is both the approach and the expectation of outcomes.

Surprises and new discoveries. In addition to using and considering the implications of the new language learned, several participants articulated ways in which their existing views were disrupted or challenged:

> I have a completely new awareness of the opportunities to engage with the community when conducting research, which will enliven everything I do in the future. *–Doctoral Student*

> As a researcher who studies relationships, I had this ah-ha moment of reading about concepts I work with in my own research (at the student-teacher level) on a new level. *–Doctoral Student*

> The primary change is the recognition that the "standing" of knowledge is a two-way street. My earlier conception was that the goal was for me, the Professor, to inform. EDGES radically changed that attitude. *–Late Career Faculty*

> Boyer's reference to the American college campus as an "island" rings true, and the example of scholars presenting their findings to colleagues in a Chicago hotel rather than to students on their own campuses gives me pause to think about why I am doing what I'm doing as a scholar and for whom. I have reread Boyer's article and plan to read it again during our EDGES program so that I may continue to challenge the paradigm I have lived in for 20 plus years in which scholarship is a personal thing for researchers on many campuses, and scholarly expertise is not necessarily shared with anyone other than colleagues in the same academic discipline. *–Late Career Faculty*

Scholarly identity. The "new language" and "surprises and new discoveries" themes relate closely to a third theme that emerged regarding how the EDGES experience challenged or even transformed participants' identities as scholars. A few quotes are again illustrative:

> The concept of integrated faculty roles: 'Academic work need not be subdivided... Individual faculty may conduct academic research in an integrated way, using their research to inform their teaching, their service, and their research in a seamless way...' I really connected with this quote…the kinds of research that I am doing allows me to unify my teaching, research, and my own desire to serve the community. *–New Faculty*

> My second goal is to obtain a teaching position at an institution that recognizes and supports community engaged scholarship as important to professional growth and student success. My fellow EDGES participants and the leadership team absolutely helped me understand what to look for during the recruiting and hiring process. *–Doctoral Student*

> My participation has helped to solidify my quest for community engaged scholarship since I had already started using service learning as a way of enhancing my productivity but was not aware of the concept of community engaged scholarship. *–Post Tenure Faculty*

> In past I have considered the Lippman et al. view of university research as the ideal ("unbiased" and removed from the action discourse). I am now considering an expanded role where the research team not only provides information but forms an opinion and advocates for that action. *–Late Career Faculty*

Impacts of learning. A final category of results from the analysis of reflection products includes examples participants shared regarding how they had integrated what they had learned from EDGES into their teaching, dossier development, and partnerships. One member of the new faculty cohort pasted a portion of her tenure dossier into her final reflection product to demonstrate how enhanced understanding and new language helped her explain her work to colleagues. Another participant reported changes to his pedagogy:

> 'The community is another text for this course' (Saltmarsh, January 2010): I loved this phrase and after the session, I revised my syllabus to include a passage that there would be multiple texts for our course: the [named] text book, the supplemental readings, and the field experience. It helped me to frame for myself (and I hope for my students) that the focus of our writings and reflections would extend beyond the traditional 'texts' we were reading together. *–New Faculty*

This participant went on to describe tangible benefits of these changes for students:

> … I'm better able to facilitate and discuss students' roles as partners in this process. As a result of my changes in instruction, work with partners, and in research, I think students (so they report) benefit from even more attention to this.

Another new faculty member described a specific meeting with her community partner that was informed by her learning:

> At the end of the term, I thought more about the concept of reciprocity and 'what' my partner was getting from our partnership. I met with the director of the children's program and we identified some tangibles that students could produce that would benefit the program. *–New Faculty*

In summary, the written reflection products revealed consistent patterns in how participants used language to define CES and partnerships and to discuss their community-engaged activities over the

period of the EDGES program. They also documented participants' awareness of their own new ways of thinking and how these changes in their understanding influenced their identities as scholars and provided examples of how participants thought they might apply (or had applied) their learning in their work.

Discussion

This study investigated faculty learning using the context of a faculty development program focused on CES. The research questions underlying the study called for the use of two methods of assessment, the quantitative CES competencies measure and a qualitative analysis of participants' written reflection products. The first research question specifically explored whether modifying the CES competencies scale and adding a retrospective pre-test would provide helpful information to document faculty learning. The results of this research indicated that the measure of CES competencies as used in EDGES was unidimensional (i.e., internally cohesive) and documented significant gains in self-reported outcomes from the beginning to the end of the year-long program. Thus, the instrument should be considered for assessing self-reported faculty learning outcomes when faculty development activities are aligned with its constitutive items.

The use of the retrospective pre-test ("then" measure at the end of the program) found that the pre-test, post-test difference underestimated the degree of learning because the "then" measure was significantly lower than both the post-test measure and the pre-test measure. Accounting for response-shift bias provides a more accurate measure of self-reported gains in learning, and future work on assessment of faculty (and student) learning outcomes would benefit from using this approach to avoid under-reporting learning gains, as may happen if investigators use a pre-/post- only design.

The CES competencies instrument provides quantitative information regarding participants' perceptions of their proficiency on individual items, including documenting areas in which most and least learning is reported to have occurred. Because this information is descriptive and thus not suitable for statistical analysis, it was not reported above, but it is related to Research Question 2 regarding the value added by integrating written reflection along with the CES competencies measure in the assessment of faculty learning. This section considers the value added by the qualitative analysis of written reflection products in three specific arenas: (a) reflection products provide specific examples of competencies on which participants report high and low levels of improvement as well as examples of the impact of their learning, (b) reflection products provide possible explanations for why participants rated themselves as they did on the competencies scale, and (c) reflection products report continued challenges experienced by participants, suggesting limitations to their learning despite their reported improvements. Each of these arenas is described briefly below.

The qualitative data allows for additional interpretation of CES competency scores. The items that showed the most change between the post- and then-test (retrospective pre-test) included: #2 "Ability to convey to others the meaning of community engagement and community engaged scholarship" (post = 5.06, then = 2.42, $\Delta = 2.64$); #3 "ability to nurture meaningful CES discourse" (post = 4.80. then = 2.21, $\Delta = 2.59$); and #18 "knowledge of the role of CES in the campus reappointment, tenure and promotion policy" (post = 4.86, then = 2.28, $\Delta = 2.58$). The reflection products support the positive increases on these scale items through examples of how participants used new language of CES in conversations with colleagues and partners and/or to document their work in dossiers. Items that showed the least change included #7 "Commitment to fostering community and social change" (post = 4.92, then = 4.35, $\Delta = .57$) and #10 "Ability to work effectively with diverse communities" (post = 5.0, then = 4.14, $\Delta = .86$). In each of these items, participants rated themselves at an intermediate level on the pre-test, and reflection products suggest these values were important to participants from the time they entered the EDGES program (not surprisingly, given the self-selection of participants into the program).

Using the CES scale, participants reported highest proficiency (5.46 on a 6-point scale) on the competency "Ability to collaborate with students as co-educators, co-learners, and co-generators of knowledge" Specific examples from participants' reflection products at the end of the program revealed dimensions of this learning, such as defining partnerships as collaborative, recognizing the need to examine and develop common goals, and recognizing the importance of the knowledge and expertise of all partners. Participants also reported high competency (5.26) on "Ability to integrate CES into my work with students," and this was supported by specific examples of how participants integrated student engagement into their teaching and/or research. Competencies for which participants reported lowest proficiency included "Ability to write successful grant proposals expressing principles and approaches of CES" (4.06) and "Ability to publish peer-reviewed articles grounded in the processes and outcomes of CES" (4.33). These ratings were supported by reflection products that indicated participants had not yet determined how to integrate CES into their disciplinary research or the scholarship-related expectations of

their colleagues and department heads. Further, as reported above, several of the products from Reflection Activity 3 included specific indications of changes participants had made to course syllabi, course activities, and conversations with community partners. This ability to identify examples of the impact of participants' learning as additional, more direct evidence of learning is an important value-added of written reflection products relative to the use of the competencies scale alone.

Finally, participants' reflection products provided examples of incomplete learning and ongoing struggles. The existence of these struggles raises the question of whether participants achieved as much learning as suggested by the CES competencies scale results. A few examples include: "Truth be told, I continue to be challenged trying to conceive an appropriate community engaged scholarship project to match my research area of interest" and "This work has almost nothing to do with my discipline." Comments such as these suggest limitations to participants' ability to integrate CES into their day-to-day scholarly activities and identify specific content for future faculty development on CES (at least on this campus).

The reflection products therefore add value as a data source in the assessment of faculty learning both by assisting with the interpretation of quantitative results and by challenging the validity of some of those results. Overall, this study suggests that assessment of learning from faculty development programs will benefit from developing instruments that tap into the specific learning goals of the intervention, including a retrospective pre-test in data collection in addition to a pre-/post-test design as well as collecting additional qualitative information from participants, such as through written reflection products.

Limitations, Implications, and Recommendations for Future Research

This section summarizes the primary limitations of this study as they relate to (a) use of the CES competencies instrument, (b) use of reflection to generate and document learning, and (c) the design and implementation of this study. Each of these limitations suggests implications for future research and assessment, which are interwoven throughout this final section.

CES Competencies Instrument

One interesting result of the CES competencies scale was that EDGES participants rated themselves quite high across all items when they completed the post-test. The response choices were described as 1 (*none*), 2 (*minimal*), 3 (*basic*), 4 (*intermediate*), 5 (*proficient*), and 6 (*advanced*). All items on the post-test had means over 4.0 and as high as 5.46 (on a 6-point scale), suggesting that participants saw themselves ranging from intermediate to advanced. Providing more descriptions of each response choice might strengthen this CES competencies scale, as might anchoring the items in specific behaviors. For example, response choices to the item "Familiarity with the basic literature of community engaged scholarship " could range from 1 – "I do not know the CES literature" to 6 – "I contribute to the CES literature."

This study suggests that scales are useful in assessing learning through the perceptions of learners but that their interpretation may be enhanced with additional evidence from participants, as obtained, for example, through reflection products. Other potentially useful sources of direct evidence, not tapped in this study, include the full range of products faculty generate in the course of their work, including, for example, syllabi, student assignments, project descriptions, grant proposals, dossiers, and publications – all of which can provide direct evidence of faculty learning, especially when examined at multiple points in time. Observations of faculty behaviors, including from students, community members, and colleagues, can also provide additional evidence of learning outcomes.

Using Reflection to Generate and Document Learning

A challenge of assessing learning through written reflection products is being sufficiently precise in operationalizing "learning." For example, the early and late definitions of CES illustrated in Table 2 point to changes in the use of language, yet on their own provide little objective evidence of enhanced understanding over time (i.e., evidence that multiple evaluators would rate at the same level through use of a rubric). Further, the ability to define concepts is a lower-order outcome, so while easy to solicit through pre- and post- reflection prompts, participant definitions alone do not lend themselves to assessing higher-order learning outcomes (e.g., the ability to critically evaluate the concepts) as well as other faculty products might (e.g., published articles).

Ash and Clayton's (2009; Ash et al., 2005) work suggests possibilities for more rigorous assessment of learning through the use of reflection products. They suggest the formalization of rubrics that are well-aligned with learning goals and activities against which to measure participants' understanding of particular concepts (Ash & Clayton; Ash et al.). Specific examples of their rubric, based on Bloom's Taxonomy (1956), demonstrate how reflection products might be scored based on the level of learning objective(s) achieved (e.g., (1) identify, (2) explain, (3) apply, (4) analyze, (5) synthesize, and (6) evalu-

ate). A similar rubric could be designed and applied to faculty reflection products to identify the level of learning based upon, for example, defining the level of collaboration in CES: (1) describing CES as activity "in" the community; (2) describing CES as activity "for" the community, and (3) describing CES as activity "with" the community. This would enable multiple raters to use an objective approach to measure the level of faculty learning.

Design and Implementation of the EDGES Program

One of the limitations of this specific study is the level of attrition in participation in the EDGES program overall, in terms of completion of all three competency scale measurements, and in completion of all three of the reflection activities. This reaffirms the self-selection bias in the results, as only the most motivated and successful remained in the program to the end. Several comments from participants indicated that their department heads see professional development as an "extracurricular" or add-on activity that does not contribute to their promotion and/or tenure. Participation in EDGES, therefore, was sometimes minimized even though the topic was of interest and faculty had made a commitment to participate.

Relatedly, relying on reflection as a means to assess learning assumes the willingness and capacity of participants to engage comprehensively with the reflection process, which did not happen to the extent needed for this study. Several participant comments in the (separate) evaluation of the EDGES program suggested that there were too many prompts and that some participants suffered from reflection fatigue. It is also possible that faculty have a deeply-entrenched skepticism of reflection as a non-academic or non-scholarly endeavor or see it as an unnecessary follow-up to – rather than an integral component of – the professional development process. These potential obstacles to faculty engagement in reflection as a tool to both generate and assess learning reinforces the need to establish from the beginning a shared understanding of the potential value of reflection and to provide support and structure throughout the process. These limitations could have been overcome had the EDGES program done more to make clear the role of reflection in learning and to set clear expectations regarding reflection activities.

Clayton and Ash (e.g., Ash & Clayton, 2009; Ash et al., 2005; Clayton & Ash, 2004) have advocated for such a strategy in previous work on student reflection. These authors suggest that students benefit from a high level of support and structure as they use critical reflection to generate, deepen, and document their learning. Examples of this kind of support include clearly explaining and demonstrating the benefits of reflection for the learner at the beginning of and throughout a course or program, providing opportunities for guided practice, building into the early stages of a course or other learning intervention immersion in the process of critical reflection, providing feedback and opportunities for learners to revise and deepen their thinking, and supporting learners in the application of critical thinking standards to their own work. The investigators' experience in this study suggests that faculty development programs – and investigations of learning in that context – would benefit from including similar procedures to those that are considered best practices for guiding student reflection (Kreber & Cranton, 2000; Mezirow, 1991).

Another implication of this study that might inform future research is that while examining written reflection products did, in fact, add value to the use of the CES competencies scale in understanding and assessing faculty learning, additional data could have been collected to provide more direct evidence of learning. One could, for example, collect course syllabi, examine examples of scholarly products (conference papers, presentations, articles), or observe participant interactions with students or community partners for evidence of learning. Anecdotally, the EDGES investigators are aware of several activities of EDGES participants since the ending of the program that could be collected to provide further evidence in the assessment of faculty learning. Examples include a participant's formation of a nonprofit organization that will provide project sustainability and equal voice among participants as board members, a participant's leading a faculty development program in partnership with a community member, and a participant's co-editing of a book of case studies on campus-community partnerships. Future studies investigating faculty learning could collect these kinds of data to further provide evidence of impacts.

Conclusion

The investigators' experience in this study reinforces the anecdotal report from Clayton and Ash (2005) that "While it is challenging to nurture reflective practice … when it works, this process is capable of generating substantial professional development among faculty across a range of disciplines and with disparate levels of experience" (p. 163). Results suggest that efforts to assess faculty learning in the arena of community engagement and community-engaged scholarship follow models of student assessment in service-learning, which move beyond self-report only and use structured reflection and rubrics as well. Ongoing investigation of what and how faculty learn can inform future faculty development and contribute to the broader knowledge base on adult learning, reflective practice, and community-engaged scholarship as faculty work.

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APPENDIX: Community Engaged Competencies Self-Assessment ("then")

You have completed this self-assessment of competencies related to community engaged scholarship before and after the EDGES program. We are now asking you to think back to the beginning of the EDGES program. Based on what you know now, how would you rate yourself on your level of each competency at the very beginning of EDGES?

Community engaged scholarship includes *scholarly activities related to research and/or teaching* that involve full collaboration of students, community partners, and faculty as co-educators, co-learners, and co-generators of knowledge and that address questions of public concern.

Please rate your level of achievement on the following competencies of community engaged scholarship by circling the appropriate number.

1 None
2 Minimal
3 Basic
4 Intermediate
5 Proficient
6 Advanced

Then, at the bottom, please identify 3 – 5 other competencies you believe are key to the successful practice of community engaged scholarship and rate yourself on the same scale.

Competency	**1**	**2**	**3**	**4**	**5**	**6**	**n/a**
1. Understanding of the concepts of "community engagement" and "community engaged scholarship"	1	2	3	4	5	6	n/a
2. Ability to convey clearly to others the meaning of "community engagement" and "community engaged scholarship"*	1	2	3	4	5	6	n/a
3. Ability to connect my understanding of "community engagement" and "community engaged scholarship" with the definitions used by others and thereby to nurture meaningful discourse*	1	2	3	4	5	6	n/a
4. Familiarity with the basic literature and history of community engaged scholarship	1	2	3	4	5	6	n/a
5. Understanding of the various contributors to community issues, including economic, social, behavioral, political, and environmental factors	1	2	3	4	5	6	n/a
6. Skills for fostering community and social change	1	2	3	4	5	6	n/a
7. Commitment to fostering community and social change	1	2	3	4	5	6	n/a
8. Knowledge of the principles of community engaged scholarship (i.e., theoretical frameworks methods of planning, implementation, and evaluation)	1	2	3	4	5	6	n/a
9. Skill in applying the principles of community engaged scholarship in practice	1	2	3	4	5	6	n/a
10. Ability to work effectively with diverse communities	1	2	3	4	5	6	n/a
11. Ability to negotiate across community-academic groups and contexts	1	2	3	4	5	6	n/a
12. Ability to write successful grant proposals expressing principles and approaches of community engaged scholarship	1	2	3	4	5	6	n/a
13. Ability to publish peer reviewed articles grounded in the processes and outcomes of community engaged scholarship	1	2	3	4	5	6	n/a
14. Ability to collaborate with community members to generate significant, useful products of community engaged scholarship that influence practice in the community	1	2	3	4	5	6	n/a
15. Ability to collaborate with community members in community capacity building endeavors	1	2	3	4	5	6	n/a

Competency	**1**	**2**	**3**	**4**	**5**	**6**	**n/a**
16. Ability to share my learning about community engaged scholarship effectively with other faculty	1	2	3	4	5	6	n/a
17. Ability to integrate research, teaching, and service through community engaged scholarship	1	2	3	4	5	6	n/a
18. Knowledge of the role of community engaged scholarship in my institution's review, promotion, and tenure process	1	2	3	4	5	6	n/a
19. Ability to effectively communicate the scholarly components of community engaged work in a portfolio for review, promotion, and/or tenure.	1	2	3	4	5	6	n/a
20. Ability to integrate community engaged scholarship successfully in my work with students (via teaching or research activities)*	1	2	3	4	5	6	n/a
21. Ability to collaborate with students as co-educators, co-learners, and co-generators of knowledge*	1	2	3	4	5	6	n/a
22. Ability to collaborate with community members as co-educators, co-learners, and co-generators of knowledge*	1	2	3	4	5	6	n/a
23. Ability to provide leadership in my campus' efforts to advance community engaged scholarship*	1	2	3	4	5	6	n/a
24. Understanding of the conditions for and dynamics of strong partnerships in community engaged scholarship*	1	2	3	4	5	6	n/a
25. Skill in establishing, maintaining, and strengthening partnerships in community engaged scholarship*	1	2	3	4	5	6	n/a

*Unique items that did not appear inearlier CES instruments.