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Assessing Faculty Development Programs: Outcome-Based Evaluation

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Centers for Teaching and Learning have increasingly realized the need to effectively measure the impact of their programming on the quality of teaching and student learning. This is especially true in the area of educational technology integration. The authors examine the evolution from using output- to outcome-based evaluation methods at their institution and share the major findings their methods revealed. The challenges that were encountered as the outcome-based measures were implemented are also explored. The article concludes with a discussion of planned future steps regarding the improvement of current evaluation practices and the incorporation of process-based evaluation practices.

Centers for Teaching and Learning (CTLs) have faced heightened expectations and challenges in supporting faculty development, particularly with the rapid expansion and importance of technology in this new millennium (Sorcinelli, Austin, Eddy, & Beach, 2006). CTLs have, therefore, devoted increasing effort to assessing the effectiveness of their programs in order to improve their practices and document their successes (Fink, 2013; Van Note Chism & Szabo, 1998). This article reflects on the evolution of our center's evaluation practices as one way of enhancing our services to faculty.

EDUCAUSE has identified the support of innovative, technology-based teaching as one of the top five challenges facing higher education (Little & Page, 2009). According to the EDUCAUSE Center for Analysis and Research's annual survey, students preferred learning environments

that blended online and face-to-face instruction and valued technology as a means to help them succeed. Students who needed support to employ technology effectively in their learning, however, preferred seeking guidance from their instructors rather than contacting others or attending separate training. It was recommended that institutions provide instructors with support to assist their students (Dahlstrom, Walker, & Dziuban, 2013). In another recent national survey administered by Babson Survey Research Group and *Inside Higher Ed*, 58% of faculty felt more pessimistic than optimistic about online learning, and nearly two thirds remained skeptical about the learning outcomes of online courses (Allen & Seaman, 2012a). Instructors' adoption of technologies does seem to be influenced by their satisfaction with institutional training and support (Allen & Seaman, 2012b). One of the critical roles that CTLs play in faculty development, therefore, is to prepare faculty to integrate technology into their teaching. This article broadly examines our transition from output- to outcome-based assessments and focuses particularly on those activities related to the integration of technology with teaching.

History and Background of Our CTL

The CTL at the University of South Dakota was established in 2007 with the central mission of fostering extraordinary teaching and learning. Based on Fink's (2003) taxonomy of significant learning, we strive to assist faculty to do the following:

- Obtain foundational knowledge about the philosophies and strategies for excellent teaching, especially those supporting the educational use of technologies.
- Apply these specific instructional strategies and technology-based learning tools to their classes.
- With the help of digital technologies, integrate teaching and learning activities into contexts outside of their traditional classrooms and integrate the research of teaching with their own academic interests.
- Learn about themselves and others as teachers and/or learners.
- Care about teaching and their students.

To achieve these goals, our CTL, staffed by one director, two educational technology integrationists, two online-learning experts, one administra-

tive assistant, and eight student assistants, provides five main services:

- **Individual consultation.** Our online-learning experts closely monitor the quality of all university online courses and provide online faculty with individual training and course reviews. Face-to-face and online instructors can contact us for individual teaching consultations. Resources have also been specifically dedicated to assisting faculty in the use of our online course management system.
- **Campus-wide workshops and events.** Our professional staff teach workshops on the use of digital technologies in teaching and on the application of various instructional strategies and pedagogies. The CTL also collaborates with other departments on campus to present workshops on issues related to teaching and learning in the digital era.
- **Grant support.** Every semester, the CTL provides competitive developmental funds to aid faculty in a variety of projects to improve teaching and student learning, with special emphasis on the application of educational technology.
- **Course redesign fellowships (CRFs).** To further encourage the integration of technology with effective course design and active-learning principles, the CTL also provides CRFs at the end of every academic year. Faculty attend a two-week workshop where they are exposed to a great variety of learning activities that are fully integrated with different technologies. The workshop is augmented by one-on-one consultations and in-class technical support for the redesigned course the first semester in which it is taught.
- **Resources.** The CTL provides tutorials on a variety of educational technologies in both electronic and print formats. Instructional resources, such as tips and ideas for teaching with technology, were also shared via social media, including our Weblog and Facebook.

Evaluation of Impacts: Framework and Current Situation

We conduct targeted assessments to study the effectiveness of our services. Human service organizations are shifting their evaluation focus nationwide, challenging themselves better to understand the impact of their services on users (Rudd, 2000). Similarly, our center has evolved from output-based toward outcome-based evaluation. The United Way of America (1996), which pioneered this type of transition, defined output-based evaluation as assessing “the direct products of program activities,” especially “the volume of work accomplished”; while outcome-based evaluation looked for “benefits or changes for individuals or populations during or after participating in program activities” (p.1). Output-based evaluation of faculty development typically calculates the numbers of workshops and attendees. Practitioners guided by outcome-based evaluation, however, are interested in the following levels of influences (Guskey, 2002; Steinert et al., 2006; Stes, Min-Leliveld, Gijbels, & Van Petegem, 2010):

- Faculty’s reaction to the service, i.e., are they satisfied with their experiences?
- Faculty’s learning, related to their knowledge, skills, attitude, and conceptions of teaching.
- Institutional impact, such as forming cross-disciplinary networks to exchange instructional resources.
- Faculty’s application of what they have learned to their teaching.
- Impact on students, including their learning outcomes and approaches.

Despite the rapid explosion of faculty development programs in the USA since the 1970s, only limited progress has been made in their evaluation practices (Brooks, Marsh, Wilcox, & Cohen, 2011). Researchers have unanimously called for increased efforts in assessing the impact of faculty development (Kucsera & Svinicki, 2010; Levinson-Rose & Menges, 1981; Steinert et al., 2006; Weimer & Lenze, 1997). Problematic assessment techniques include conducting only non-empirical reflections or measuring only faculty satisfaction (Stes et al., 2010). Additionally, centers that do investigate influences on participants’ teaching rely most heavily on faculty self-reports and fail to triangulate findings (Hines, 2009; Van Note Chism & Szabo, 1998).

Evaluations of Our Faculty Development Services

Stage 1:

Academic Years 2007-2010 (Output-Based Evaluation)

Our CTL was founded in 2007. During the first three years, we conducted mainly output-based evaluation of our services. The CTL director composed an annual internal report that described each program and listed the number of attendees. The number of participants for each program was then compared to data from previous years. Strategic planning for the following academic year was based on this analysis. For instance, activities with declining attendance rates were removed.

Stage 2:

Academic Years 2010-Current (Outcome-Based Evaluation)

The staff recognized in 2010 that a report presenting only data on the use of our services was not providing sufficient evidence to measure our true effectiveness. As a result, we developed a series of outcome-based evaluations better to understand the impact of our programs on participants. In addition to recording the numbers of events and attendees, the following improvements have been made to our assessment process:

- We adopt concrete objectives to guide both our event planning and assessment.
- Existing university data are utilized in our evaluation. The Instructional Development and Effectiveness Assessment (IDEA) form, a five-point Likert scale instrument, is used by students to evaluate almost every course offered at the university each semester. It was first developed in 1968 (Hoyt & Cashin, 1977), and is currently being used by more than 365 colleges and universities (IDEA Center, 2013).
- Workshop evaluations are used to measure participants' satisfaction with our programming. At the end of each workshop, attendees are invited to complete an anonymous survey on a voluntary basis.
- Phone surveys were administered at the end of each academic year. A random selection of workshop attendees were contacted to learn whether or not the training experiences might have influenced their teaching.

Assessing Objectives for 2011-12

These processes were able to help us assess three objectives in Academic Year 2011-2012.

Objective 1: Faculty who participate in our educational technology workshops will make greater use of technologies to promote their students' learning than the USD average. This objective was measured by analyzing the percentage of courses that were rated 3.5 or higher (1 = definitely false; 5 = definitely true) on IDEA Question 47: "The instructor used educational technology (e.g., Internet, e-mail, computer exercises, multi-media presentations, etc.) to promote learning." Altogether 181 faculty members had participated in educational technology workshops. They were divided into two groups based on the number of workshops that they had attended. Specifically, 33 of them had attended more than two workshops, while 148 had attended one or two workshops. We compared each cohort's IDEA ratings with those of the university total. To preserve confidentiality, data were processed through our Office of Academic Evaluation and Assessment. Therefore, we had access only to their aggregate data (see Table 1). These data indicate that faculty who participated in our educational technology workshops were rated more highly on Question 47 than faculty who did not. In Spring 2012, faculty who attended our educational technology workshops made greater use of technology than those who attended fewer or no workshops.

Objective 2: Faculty who participate in our individual teaching consultation process will show teaching improvement the semester of and the semester after consultation. This objective was measured using the faculty members' average raw score for all their courses in the four major IDEA categories: students' perceived progress on instructional objectives through the course, excellent instructor, excellent course, and overall summary. Four faculty members went through the consultation during Fall 2011. Table 2 lists their IDEA scores two semesters prior to and after beginning their consultation. Their Fall 2010 and Spring 2011 scores were averaged as pre-participation scores. According to Table 2, the cohort's average percentile point gains for the four categories ranged from 4.15 to 6.89 in Fall 2011. Their scores improved further during Spring 2012, with their average percentile point gains for all the categories above 12.00.

Objective 3: Faculty will indicate that our educational technology workshops are useful and help them improve their teaching. Altogether, 265 responses were collected from our post-workshop survey. The average rating on a Likert scale item, "This workshop was useful" (1 = *not useful*; 5 = *extremely useful*), was 4.51. Ninety-six percent of the attendees answered "yes" to the question "Do you

Table 1
Percentage of Courses Scoring 3.5 or Higher for IDEA Question 47

	<i>University Total</i>		<i>Faculty Who Attended 1-2 Educational Technology Workshops</i>		<i>Faculty Who Attended 3 or More Educational Technology Workshops</i>	
	No. of Courses	%	No. of Courses	%	No. of Courses	%
<i>Fall 2011</i>						
Courses scoring 3.5 or higher	1057	92%	198	97%	50	96%
Total	1144		205		52	
<i>Spring 2012</i>						
Courses scoring 3.5 or higher	1026	94%	191	96%	61	97%
Total	1091		200		63	

Table 2
IDEA Percentile Averages for Faculty Who Went Through FA11 Consultation Process

	<i>FA10</i>	<i>SP11</i>	<i>FA11</i>	<i>SP12</i>	<i>FA11-Pre</i>	<i>SP12-Pre</i>
Progress on Objectives	43.08	43.15	50.00	55.40	6.89	12.29
Excellent Teacher	43.25	39.95	45.75	53.93	4.15	12.33
Excellent Course	38.53	38.20	43.50	51.15	5.14	12.79
Overall Summary	42.35	41.43	47.55	54.15	5.66	12.26

plan to implement at least one item you learned in this session?" Ninety-one percent also identified a specific plan to implement.

We also randomly chose 16 instructors from our workshop participants to survey over the phone. Ten of them agreed to this request. All of them reported implementing specific, identifiable changes in their teaching because of their participation in our workshops.

Assessing the CRF

We also conducted focused evaluations of our CRF. Our revised processes were able to help us assess two additional objectives.

Objective 1: Faculty who participate in CRF will show improvements in their teaching evaluations. Nine faculty members attended our two-week CRF workshop during Summer 2011. Their IDEA data from two semesters before and after Summer 2011 were used (with their permission) to generate Table 3. In Table 3, faculty's Fall 2010 and Spring 2011 scores were averaged to compute pre-CRF scores. There was a clear improvement in all four categories during Fall 2011, with scores improving even further in Spring 2012. We also administered Wilcoxon signed-ranks tests using IBM SPSS Statistics 20 software to compare their prior and post participation scores. Although no significant differences between the pre-CRF and Fall 2011 scores were identified, a significant increase was detected between their pre-CRF and Spring 2012 scores in regard to students' perceived progress on instructional objectives through the course ($Z = 2.43$; $p = .015$). A marginal significant increase was also observed in the category of "overall summary" ($Z = 1.84$; $p = .066$). Because of the small sample size, caution should be exercised not to draw a conclusion when no significant effects were detected.

Objective 2: Faculty who participate in the CRF will show improvements in their teaching conceptions. CRF participants were also invited to participate voluntarily in a follow-up e-mail interview, which provided qualitative data. A fine arts instructor, for example, decided to transform her role in the class from information distributor to learning facilitator after attending the CRF workshop. With that in mind, she redesigned her course that was originally "teaching centered" with "about 90% lecture" by introducing collaborative and hands-on exercises. Eventually, she was able to develop a course that was "learning centered," with "about 5% lecture." Through this process, she also intentionally adopted strategies to scaffold her students from passive listening to actively engaging with the learning materials and expressing their ideas. For instance, she reflected that arranging "a group discussion prior to opening the discussion to the whole class builds the confidence level of those who are more likely to be passive learners."

Table 3
IDEA Percentile Averages for Faculty Who Participated in CRF

	<i>FA10</i>	<i>SP11</i>	<i>FA11</i>	<i>SP12</i>	<i>FA11-Pre</i>	<i>SP12-Pre</i>
Progress on Objectives	47.17	47.29	50.40	54.17	3.17	6.94
Excellent Teacher	46.57	45.96	47.40	51.02	1.13	4.75
Excellent Course	45.03	42.78	45.48	46.67	1.58	2.77
Overall Summary	46.82	46.11	48.81	53.03	2.34	6.57

Discussion

Current Transition and Experienced Barriers

The extension of our evaluation practices beyond listing activities (Hines, 2009) began with the process of establishing objectives, during which we strived to determine specific indicators to track our success on realizing intended outcomes (United Way of America, 1996). We also attempted to assess deeper levels of the impact our programs had on teaching and student learning, instead of focusing primarily on participants' satisfaction. Our data included not only faculty members' self-reports but also their students' ratings.

We have experienced obstacles that have prevented us from conducting a rigorous quantitative evaluation, and other practitioners have reported similar issues. For instance, although our CTL routinely engages about 60% of our faculty in its programs, the number of attendees is still low enough to make deeper statistical analysis difficult (Van Note Chism & Szabo, 1998). Additionally, random assignment of participants to control and experimental groups is not practical (Stes et al., 2010). It is also difficult to find a comparable control group to our participants. Those who choose to attend our workshops might either need more help with teaching or be highly motivated to improve their students' learning (Ho, Watkins, & Kelly, 2001), while faculty members' prior knowledge impacts the effectiveness of training (Ho et al., 2001; Steinert et al., 2006)

Faculty require follow-up sessions after being introduced to technology-based innovations, where we help them incorporate what they have learned into their local teaching contexts (Kucsera & Svinicki, 2010). Our findings that the impact of individual teaching consultation and CRF were more significant in Spring 2012 than in Fall 2011 prove this point. Long-term tracking is, therefore, needed to assess the impact of our intervention.

One unique challenge that we have experienced is related to categorizing our service users. Categorization helps us assess how well we have addressed the needs of different types of faculty. With the expansion of online courses at our university, we have extended our services to online instructors, who are drawn both from the existing full-time and adjunct faculty. The introduction of the new category of online instructors will lead to an overlapping with existing ones. Therefore, we should revise our assessment classification.

Next Steps

Improving Current Evaluation Practices

Currently, most faculty development evaluations adopted locally constructed instruments (Stes et al., 2010). While these instruments may be a better fit for local institutional contexts, there is often a lack of validity and reliability testing, and the use of different instruments hampers aggregation and comparison of findings across studies (Levinson-Rose & Menges, 1981). In our evaluation, we adopted data using the standardized IDEA instrument. During our most recent focused evaluation of the CRF, we have adapted the survey instrument developed by Miami University's Top 25 Project to study the impact of faculty's participation in the program on their students' learning. In addition, we plan to incorporate the Approach to Teaching Inventory (Trigwell & Prosser, 2004), which has been validated, to compare faculty's teaching conceptions prior to and after engaging in our CRF.

Presently, there has been a lack of effort among CTLs regarding the routine evaluation of their resource services (Hines, 2009). Assisted by web log analysis tools, such as Google Analytics, we also plan to incorporate the assessment of our electronic resource services into our future evaluation. For instance, based on the number and average length of visits for each resource link, we will be able to compare the helpfulness of different types of resources.

Going Beyond Outcome-Based Evaluation

In the future, we will also attempt to include process-based evalu-

ation into our practices. Various organizational and contextual factors might influence faculty's use of technology; therefore, after introducing new tools to them, it is helpful to track whether and how changes might occur within their classes (Levinson-Rose & Menges, 1981; Steinert et al., 2006). One methodology to guide us is design-based research (DBR), which generally possesses the following characteristics (Design-Based Research Collective, 2003):

- Iterative cycles of design development and related theory study are involved.
- The goal is to seek for evaluation and research findings that are of help for practitioners.
- Efforts are made to investigate the interactions between the design and the real context.
- Mixed methods that demonstrate the outcomes and associate processes with these outcomes are adopted.

Effective faculty development programs are designed based on the principles derived from related learning and teaching theories (Weimer & Lenze, 1997). Guided by DBR, we can acquire understandings to help improve not only the design of our programs, but also relevant theories and principles. We also plan to incorporate qualitative methods, including in-depth observations and interviews, into our evaluation of CRF. During qualitative investigation, we will look for powerful anecdotes and testimonials to add into our evaluation report, because they immediately establish personal connections to report readers (Guskey, 2002). Additionally, we will invite the faculty to become co-researchers and set an example for their future self-assessment of teaching (Kucsera & Svinicki, 2010).

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