Teaching Teachers to Teach Online:
How to Implement an Evidence-Based Approach to Training Faculty

Laura March
Center for Teaching, Research, and Learning
American University
United States
laura@lauramarch.com

James R Lee
Center for Teaching, Research, and Learning
American University
United States
jlee@american.edu

Abstract: This paper provides practical tips on evaluating preparation for distance education programs. Developers of the American University Faculty Online Training Program highlight the challenges and successes of implementing a holistic strategy to virtual teacher instruction. In their training course, faculty are taught how to create high-quality learning outcomes, use online terminology correctly, adhere to university guidelines, and fully utilize Learning Management System capabilities. New directions for online faculty development and assessment are also discussed in this paper.

Introduction

Over 5.8 million post-secondary students were enrolled in at least one distance education course in fall 2014 (Allen et al., 2016, p. 4). Nearly two thirds of academic leaders viewed online education as critical to the long-term strategy of their institutions (Allen et al., 2016, p. 5). Faculty members that can develop and teach effective online courses are in high demand as the number of virtual courses and students continues to rise (Keengwe & Kidd, 2010). Unfortunately, research addressing the incorporation of technology into sound pedagogy within the field of online instruction is lacking (Baran et al., 2011). A 2013 survey found that the vast majority of post-secondary educators have neither the confidence nor the competence required to teach online (Downing & Dyment, 2013). These findings mimic an earlier study that revealed online educator preparation strategies "should include both technical and pedagogical training" (Lackey, 2011).

Effective eLearning instructor preparation is needed because professors often use the same teaching methods as they were taught – regardless of effectiveness – yet few have ever been an online student (McQuiggan, 2012). Online faculty development programs "reveal keys to successful pedagogy as more faculty members participate in continual evolution of best practices for their fields of study" (Bichsel, 2014, p. 26). This paper also responds to Meyer & Murrell's (2014) call for future research: "Faculty developers who are willing to test what they do and share their results with other faculty developers are urged to regularly share their findings via conferences and publications."

Key Research Questions & Approach

This research represents a pilot approach to understanding several dimensions of faculty knowledge as it relates to distance education. Data was collected from a faculty certification program for online instruction at a Mid-Atlantic liberal arts university. Effectiveness of the training program was evaluated through anonymous pre- and post-class multiple choice questions on instructional design, teaching technology, and university teaching requirements.

Participants of this study were self-selected among the 31 instructors taking the fall 2015 and spring 2016 training courses. Of these, 74.2% were term or adjunct instructors; 16.1% were assistant, associate, or full professors; and 9.8% were graduate students or administrative staff. While 23 instructors completed the pre-test, only 21 completed the post-test. Current limitations include a small number of cases available for testing as well as a lack of

secondary descriptive information that would allow greater data discrimination. No individual feedback on pre-course assessments was provided. It is hypothesized that the training course helped participants gain pedagogical and technical knowledge. The following two research questions work in conjunction with one another:

1. Faculty often have limited knowledge of good teaching practices, effective educational technologies, and institutional teaching requirements. It is no secret that faculty in higher education often have very little formal training as teachers. Do potential online instructors have a basic understanding of educational best practices?
2. Online learning requirements, best practices, and technologies are covered in the five-week training session. Are faculty actually learning these topics?

Review of Literature

Online Faculty Training

In a survey of institutions belonging to the Online Learning Consortium, Meyer & Murrell (2014) found that over 90% of universities provide face-to-face distance educator training. On the other hand, "uniquely online methods for training faculty how to teach online (online modules, webinars) are less popular" (Meyer & Murrell, 2014). Other studies show that fully-virtual training often produces online instructors that feel isolated from colleagues as they miss out on meaningful discussions, constructive feedback, and a sense of collegiality (Gabriel & Kaufield, 2008). The purpose of the training class in this study is to prepare instructors to teach in hybrid or fully online formats, as these are often very different venues for instruction compared to traditional face-to-face classes (Ko & Rossen, 2010; Spector & De la Teja, 2001).

By formatting online instruction training as a five-week hybrid course (partly face-to-face and partly online), the authors aim to provide the best of both worlds. It is also an opportunity to cover best teaching practices and a means to gain feedback on course content in a friendly and supportive environment. Participants are expected to spend 5-7 hours each week outside of class watching recommended videos, reading assigned articles, participating in discussion boards, and completing assignments. To finish the course, instructors must have a fully redeveloped syllabus and two weeks of course content within a test space inside the university's Learning Management System. Instructors are required to pass the online training course before teaching their first online or hybrid course.

Just like their students, future online teachers need to do more than simply listen in order to truly learn about becoming a successful virtual educator. Participants enter the training course prepared with a face-to-face syllabus (usually for a class they have already taught). Course attendees participate in active (participation-driven) and authentic (real-world relevant) learning environments by submitting pieces of their course redesign each week. Much of the training class also involves peer-review and formative evaluation – strategies that encourage higher-level thinking skills (Althauser & Darnall, 2001; Li & Steckelberg, 2006; Odom et al., 2009, p. 111). This training course may be the only time participants experience effective educational practices.

Coursework is guided by ADDIE, an instructional systems framework used to develop effective eLearning curriculum (Soto, 2013). Each week relates one aspect of the framework (Analysis, Design, Development, Implementation, and Evaluation) to the process of academic course creation. Incorporating and teaching the ADDIE model ensures that training needs, materials, instruction, and evaluation techniques are fully aligned (Allen, 2006, pp. 430-431). Class facilitators validate quality work by employing rubrics. Rubrics clarify, communicate, and provide feedback on learning goals (Andrade, 2005, p. 27). Final work is evaluated against Quality Matters (QM) standards, which are used to assess the design of online and hybrid courses (Quality Matters, 2014).

However, simply evaluating final coursework cannot measure the entire faculty development process. Both pre-course and post-course assessments are needed to confirm the training's validity. While previous attitudinal research has illustrated shifting opinions and views on eLearning as the result of preparatory activities and teaching online (Jaschik & Lederman, 2013, p. 9; Straumsheim, 2015, pp. 5-6), this study seeks to clearly define the impact of online teaching preparation on instructional knowledge. In doing so, the results highlight the challenges and successes of implementing a holistic strategy to virtual educator training.

Learning Outcomes

Learning outcomes are used in higher education to describe successful learning experiences. The ECTS Users' Guide (2015) defines learning outcomes as "statements of what the individual knows, understands and is able to do on completion of a learning process" (p. 10). Instructors must align measurable and specific learning outcomes with their teaching methodologies and assessments to make transparent educational experiences (Kennedy et al., 2006, p. 19). More specifically, faculty may need to modify learning outcomes (or the resulting coursework) to ensure achievability online. As the rest of the course development process depends upon strong learning outcomes, the first

week of the training course is devoted to the topic. Participants receive a list of action verbs derived from Bloom et al.'s (1956) taxonomy and are encouraged to format their redesigned learning outcomes as endings to the phrase, "By the end of this class, students will be able to…" *Question 1* on the assessment asks respondents to identify a learning outcome that is both measurable and specific.

University Guidelines

All instructors, online or not, should know the number of direct instruction and student-guided (homework) hours required per course credit. This is especially true for virtual classes because face-to-face teaching must be replaced. Accredited institutions that accept student aid in the United States must comply with the federal definition of a Carnegie Unit: one academic credit is at least 12.5 hours of faculty instruction and 25 hours of student work over a 15-week semester or the equivalent amount of academic work (Program Integrity Issues, 2011). This regulation is accessible online in the university's academic handbook and is discussed during the second week of training. Faculty are asked to clearly describe the number of weekly hours required for successful course completion as part of a "Course Information" section within their first syllabus draft. Respondents are asked to identify the correct number of direct and student-led hours for a three-credit class in *Question 2* on the assessment.

Online Terminology

Online education vocabulary varies greatly from terms used in traditional face-to-face teaching. Course facilitators define hybrid, asynchronous, and synchronous throughout the training process. Hybrid courses, also called blended courses, replace some (but not all) of in-person learning experiences with online work (Dziuban et al., 2004, p. 2). Asynchronous learning activities are completed by students on their own schedules (without live faculty interactions). Synchronous endeavors are activities that take place at the same time, usually through video conferencing tools (Hrastinski, 2008). Course participants must describe their specific educational methodologies as part of their first draft syllabus, which is due for facilitator feedback after the second week of training. *Questions 3* and *Question 5* of the assessment check respondents' understanding of these terms.

LMS Capabilities

Learning Management Systems (LMS) are used by educational institutions for organizing electronic course content. The most popular LMS is Blackboard, with 41% of the educational market share (Green, 2013, p. 23). Blackboard was originally created in 1997 as a user-friendly tool for college professors to put course information (such as syllabi, links, and study guides) online (Bradford et al., 2007). Instructors can drastically modify their Blackboard space to align with their pedagogical organization. Efficient tools that simplify the eLearning experience can also be included.

The third and fourth week of the training course is devoted to Blackboard exploration. Faculty are asked to design their own class sites with two full weeks of course content – including graded submission areas. To see if training participants are able to grasp some of the advanced affordances of the LMS tool, researchers provided a list of capabilities and asked which (if any) could not be accomplished through Blackboard in *Question 4*. The correct answer, "Blackboard cannot display when a student has read a downloaded file," also invites instructors to consider alternate ways that assignment completion can be assessed through active learning activities.

Results & Analysis

Given the limited number of questions and respondents, the following findings are meant solely to be descriptive in nature. Pre-test and post-test responses were analyzed with respect to each question (Fig. 1), individual scores (Fig. 2), and percent change (Fig. 3).

Many instructors do not know standard teaching information. Far fewer understand technical capabilities and eLearning terminology.

Prior knowledge varied across the topics tested, as was clearly visible through the pre-test assessment (Fig. 1). Almost one-quarter of participants came to the training class not knowing the amount of hours required per academic credit. Really, all instructors with previous teaching experience should know this answer. About half could not identify a high-quality learning outcome nor correctly describe potential hybrid course layouts. As such, some instructors may need help understanding what learning outcomes are and their importance in course design even though faculty are required to include them on their syllabi. Perhaps this information is not easily accessible or discussed as a requirement for teaching.

Even fewer respondents understood Blackboard capabilities or could differentiate between synchronous and asynchronous instructional practices. This is more understandable, however, as the training course could be the participants' first foray into educational technology tools and language. Nevertheless, departmental administrators should confirm that faculty are familiar with any required technology or time-based restraints before scheduling course instructors for online or hybrid classes.

Participants gained knowledge in all areas tested after completing the training course.

Along with the total percent of correct responses on every question (Fig. 1), individual raw scores improved dramatically (Fig. 2). The distribution of the frequency of raw scores (ranging from 0 to 5) shows a large shift in the mean, median, and mode between the pre- and post-tests. The pre-test scores have a fairly normal bell curve distribution with a distinct central point. However, the post-test scores shift higher with an absence of low scores, thus indicating substantial skewing.

Almost all post-class participants were able to provide correct responses to questions on learning outcomes, credit hours, and hybrid coursework. Participation in a training course for online instruction seems to ensure almost complete understanding of these three areas. The final two questions, on Blackboard capabilities and asynchronous vs. synchronous distinctions, had lower rates of correct responses. However, these questions were framed differently than the first three; *Question 4* offered an "all of the above," option and *Question 5* asked participants to select all that apply. This may have had the unintended consequence of influencing incorrect response rates. Nonetheless, these final questions show much higher rates of change between pre- and post-test responses.
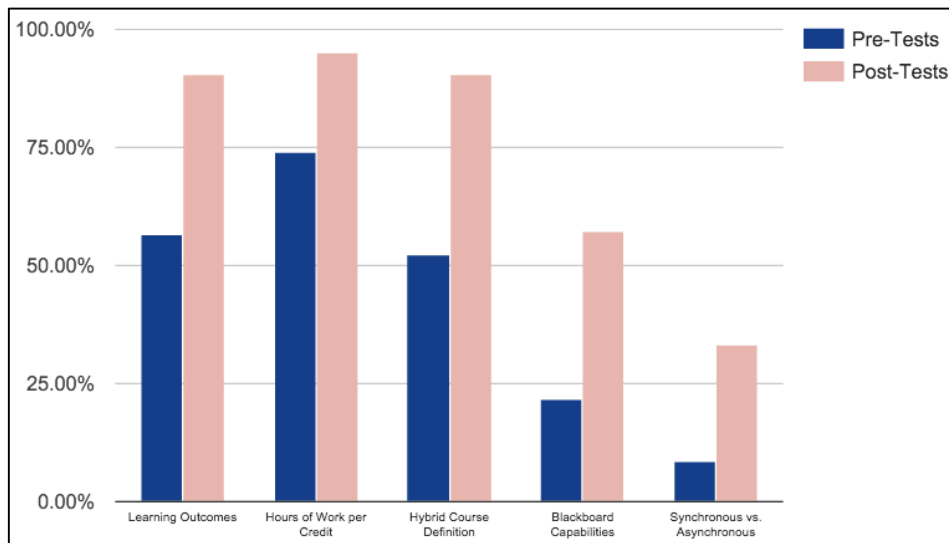

Figure 1: Percent of Correct Responses to Question by Pre-Test and Post-Test
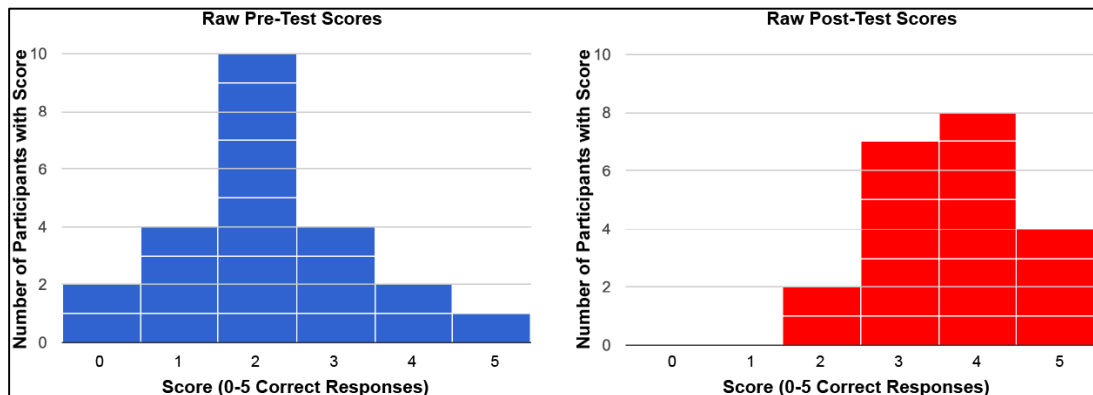

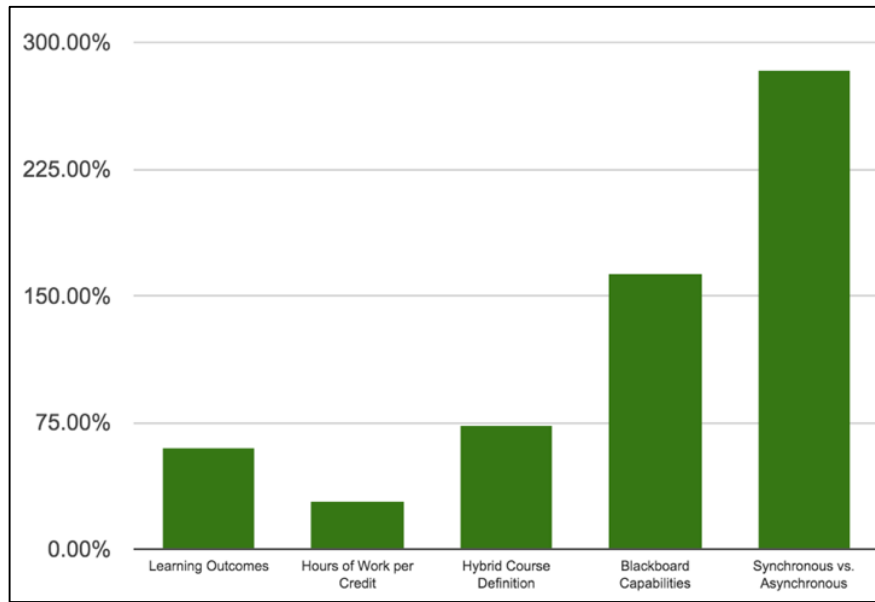**Figure 2:** Frequency of Individual Raw Test Scores by Pre-Test (left) and Post-Test (right)

Figure 3: Percent of Change between Pre-Test and Post-Test by Question

Conclusion

This pilot study provides a framework for assessing online instructor training programs. Faculty were tested on learning outcomes, online terminology, university guidelines, and LMS capabilities prior to and after attending training. While not definitive, correct responses on each topic increased. The pre- and post-test format allowed faculty developers to find and address areas of improvement within the training program. These anonymous assessments, combined with participation in a hybrid class with active learning activities and feedback on the course redesign process, offer a holistic strategy to virtual teacher instruction. Additionally, this research illustrates a quantifiable method for assessing pedagogical and technological knowledge.

Recommendations for future studies include access to a larger pool of faculty, which would provide more potential respondents and raise statistical reliability. More questions could be added to the assessment to offer further information on faculty knowledge, although additional work should be balanced with the desire to keep the survey manageable and relatively short. Moreover, individual participants could be labeled and tracked for specific demographic insights as well as individual pre- and post-course results.

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