International Journal of Advanced Education and Research
ISSN: 2455-5746, Impact Factor: RJIF 5.34
www.alleducationjournal.com
Volume 1; Issue 11; November 2016; Page No. 43-46

Qualifications of faculty developing CBE programs in business

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Abstract
Interest in competency-based education (CBE) has been growing as institutions look for new and innovative ways to deliver quality degree programs. A new generation of CBE programs is being developed in an environment that is characterized by a lack of standards and commonly accepted practices (Fain, 2015). Questions abound about the qualifications and backgrounds of faculty and subject matter experts who are developing CBE programs in the business discipline (AAUP, 2003). This study examines the backgrounds of 47 faculty members who have participated in the development of several CBE programs in business.

Keywords: competency-based education, competency-based learning, curriculum development, CBE degree programs, CBE faculty, faculty demographics, faculty roles

1. Introduction
Touted as a disruptive innovation in higher education that can improve completion rates and lower the costs of college, interest in competency-based education (CBE) is at an all-time high. Estimates suggest that between 200 and 600 institutions are creating competency-based programs (Yang, 2014; Fain, 2015) [22, 8]. With no standard CBE model to follow, institutions are developing individual processes for developing and delivering CBE programs (Johnstone & Soares, 2014) [12]. At the center of these new processes are faculty members and subject matter experts who curate learning resources and create content. Just as little is known about the processes institutions are using to develop programs, little is known about the faculty and subject matter experts who are central to the curriculum development process. This study examines the demographic backgrounds and experiences of faculty and subject matter experts who developed first generation CBE programs.

Competency-based Education Overview
Although recently heralded as a higher education innovation, CBE is not a new curriculum model. Early adopters of competency-based models include Alverno College, Excelsior College's School of Nursing, and Rio Salado College (Adelman, 2013) [1]. The regional accreditation of Western Governors University in 2003 heralded a new interest in CBE programs. Today, institutions like Southern New Hampshire University, Northern Arizona University, and Brandman University have launched successful CBE programs.
In 2001, the U.S. Department of Education issued the following definition of competency: "a combination of skills, ability and knowledge needed to perform a specific task" (p. 1). Faculty within the institution develops a list of competencies that a student needs to demonstrate to graduate. Graduation is based on the student's knowledge and skills as demonstrated on a series of assessments rather than seat time.
Using backward design, competencies are identified, assessments are developed, and learning or course content is developed last (Voorhees, 2001) [21]. Program designers seek to align competencies with industry requirements so that students are job ready upon graduation (Carlson, 2013; O'Donoghue & Chapman, 2010) [4, 17]. Faculty are an integral part of the curriculum design process and retain control of the curriculum (Johnstone & Soares, 2012).

Curriculum Development Process
As new internet and computer technologies were developed, faculty members who had previously taught face-to-face courses had demographic and academic profiles similar to those of their colleagues were tapped with developing online versions of the courses (Caulfield, 2011) [5]. As budgets were cut and online enrollment exploded, a number of online institutions, primarily for-profit colleges, began using a disaggregated faculty model for developing online courses (Sandeen, 2014) [20]. Paris (2013) [18] wrote "many of the things faculty members used to do—course design, selection of materials, creation of assignments, and assessment—are increasingly being organized by administrators and specialists and then turned over to often peripatetic adjuncts" (para. 1). Rather than a single faculty member developing an online course, teams consisting of various combinations of faculty members, subject matter experts, instructional designers, and information technology professionals crafted those courses (Freeman, 2015) [9]. Information on the demographic backgrounds and qualifications of the faculty and administrative staff that developed online courses became less transparent as the faculty model was unbundled.
Klein-Collins (2012) examined competency-based models at several institutions and found that defining the faculty model in competency-based education can be challenging. At many institutions, the roles of CBE faculty are evolving or are intertwined with other online teaching activities and/or traditional faculty roles. Other institutions rely on subject matter experts hired via temporary contracts to develop the bulk of their CBE programs. Cleary (2015) [7] suggested that a clear picture of what faculty are and are not doing in competency-based programs is missing. What little information that is available on the qualifications and backgrounds of faculty developing CBE programs comes from

a 2015 study by the Competency-Based Education Network (CBEN).

2. Methodology

Population

For this study, a convenience sample was used to gather data on the backgrounds of faculty members who had participated in CBE curriculum development. At the present time, no listing of faculty members who have participated in CBE curriculum development projects exists. The researchers identified faculty members and subject matter experts that had participated in CBE program development at four universities where the researchers had been part of the development process. Seventy-five faculty members were directly invited to engage in the survey; 58 participated (77%), with 47 (63%) completing the survey in its entirety.

Data Collection and Analysis

An anonymous questionnaire was created in SurveyMonkey. E-mail invitations were sent out to 75 faculty and subject matter experts who had been identified as participating in previous CBE program development activities. The survey included 15 questions that examined the backgrounds, academic preparation, and perceptions of faculty who had participated in CBE development. The data were collected with SurveyMonkey and aggregated to ensure confidentiality. Descriptive statistics were computed using Excel and SPSS. Frequency tables are used to present the data (Norris, 2012) [16].

3. Findings

A total of 58 individuals accessed the survey in SurveyMonkey. Of the respondents, 51 indicated that they had participated in the development of competency-based courses and programs. A total of 47 respondents who had developed CBE programs completed the survey in its entirety.

Demographics

This study examined the demographics of faculty involved in competency-based curriculum development. Table 1 provides data on the ages, gender and ethnicity of participants.

Table 1: Age, Gender & Ethnicity of CBE Faculty

Age Range (years)	Number	Percent	
26-34	2	4%	
35-44	12	26%	
45-54	12	26%	
55-64	14	30%	
65-74	7	15%	
Totals	47	100%	
Gender	**Number**	**Percent**	**2011 National Percentage***
Female	24	51%	48%
Male	22	47%	52%
Did not disclose	1	2%	
Ethnicity	**Number**	**Percent**	**2013 National Percentage***
Asian/Pacific Islander	2	4%	10%
Black or African American	10	21%	6%
Hispanic American	2	4%	5%
White/Caucasian	31	66%	79%
Multiple ethnicity/other	1	2%	1%
Did not disclosure	1	1%	

Academic Qualifications

Data on the academic profiles of the survey participants begin in Table 2. Twenty-seven of the 47 survey respondents (57%) indicated that they were employed as full-time faculty, the remaining faculty members (20) selected part-time status. In 2011, 49% of all faculty members in the United States were employed full-time (Institute of Education Sciences, 2015). Table 3 summarizes data on the types of college courses developed. The largest percentage of faculty (74%) had previously developed online courses. A little over half of the respondents (57%) had developed face-to-face courses. Table 4 provides a list of the types of CBE program components that faculty members had developed.

Table 2: Degrees Earned & Employment Status

Degree Earned	Number	Percent	2011National Percentages
Bachelors	2	4%	n/a
Masters	14	30%	n/a
Doctorate	30	64%	n/a
Missing	1	2%	n/a
Employment Status			
Full-time Faculty	27	57%	49%
Less than Full-Time	20	43%	50%

Table 3: Courses Developed

Types of college-level courses developed	Number	Percent
Face-to-face	27	57%
Online	35	74%
Blended	23	49%
Hybrid	15	32%
Other	4	9%

Table 4: CBE Components Developed

CBE Program Components Developed	Number	Percent
Learning Objectives/Outcomes	42	89%
Discussion Questions	39	83%
Formative Assessments	38	81%
Summative Assessments	36	77%
Lessons	36	77%
Scoring rubrics	36	77%
Lectures	31	66%
Competency Statements	30	64%
Videos	19	40%
Simulations	17	36%
Social media elements	15	32%
Webinars	14	30%
Games	10	21%

4. Discussion

Characteristics

The demographic data did not reveal any surprises. Respondents were middle-aged, with 70 percent of the faculty 45 years of age or older. Of note was the lower percentage (4%) of faculty under 35 who participated in the survey. The lack of participation by faculty members under the age of 35 suggests that CBE program development processes may be mimicking traditional curriculum development processes that are primarily led by well-established faculty members, with little input on learning preferences from students or young adults (Myers, 2008) [14]. The faculty makeup was slightly more female than national averages, but both men and women were involved in CBE curriculum development. The faculty developing CBE programs were largely white (66%), which is

not surprising given the national averages for faculty ethnicities. Examining the demographic data raises some questions about how the CBE programs designed primarily by a mature, white faculty will engage and motivate an increasing diverse student body (Myers, 2008, Institute of Education Sciences, 2015) [14].

Credentials

Survey respondents were more likely to have earned a doctoral degree (64%) or a master's degree (30%) than a bachelor's degree (4%). However, since this study used a convenience sample, the data may be skewed. The researchers' CBE development experience is primarily at the university level; therefore, the individuals invited to participate may have been more likely to hold either a master's or doctoral degree. Universities typically require a minimum of a master's degree for both part-time and full-time faculty positions/

The number of full time faculty participating in this survey (59%) was larger than national averages (49%). The participation of more full time faculty may suggest that institutions handled the development of their CBE programs circumspectly due to the delicate nature of this innovative learning model. Rather than hiring additional faculty for CBE development, current full-time faculty members were assigned or volunteered for CBE development projects. Another driver for the use of full-time faculty may be the high costs associated with CBE program development, which can exceed $1,000,000 for developing an entire degree program from scratch. While some institutions received state and federal funding, including grants of $250,000 per year for development of CBE programs (Gratz, 2015) [10], others opted to purchase standardized programs for half a million dollars or more using models such as the Polaris business model (Council for Adult and Experiential Learning, 2014). Cost is a significant factor in the development of CBE programs. For this reason, expanding the roles of full-time faculty is a common approach.

The majority of the faculty surveyed (83%) had experience developing discussion questions. Respondents had developed formative (81%) and summative assessments (77%). Seventy-seven percent had developed lessons (77%) and scoring rubrics (77%). Discussion questions, assessments, and lessons are the cornerstones of curriculum development so the high percentages were not a surprise. Faculty had less experience with developing webinars, videos, and learning objects. Webinars are often key components of blended learning programs and only 30% of the respondents had developed webinars. Often, the CBE design process includes support of instructional technologists and information technology specialists which may contribute to the lack of experience of faculty in developing web objects (Reiser & Dempsey, 2012) [19]. The development of web objects may be outsourced to educational technology companies contributing to the lack of faculty experience.

5. Conclusion

Faculty plays a crucial role in ensuring that competency-based programs are pedagogically sound. Questions about who is developing competency-based programs and their qualifications and credentials abound. With no national standards and much of the development being performed by subject matter experts on contract to the institution, it is important to begin gathering data on who the faculty developers are and their credentials and experiences. The sample size for this study is limited and only provides a brief snapshot of the faculty developing new CBE programs. Further study will need to be undertaken to develop a credentialing process for faculty participating in development efforts.

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