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A Qualitative Assessment of Professional Development in a Competency-Based Education Model

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This is to certify that the doctoral study by

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Abstract

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MA, Walden University, 2012

BS, Spring Arbor University, 2011

Project Study Submitted in Partial Fulfillment

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Abstract

Competency-based education (CBE) is increasingly important in higher education, both in volume and pervasiveness, which increases the need for comprehensive, systematic, and effective program-based support and instruction for faculty and staff. The purpose of this qualitative Delphi study was to gather expert opinions about competency-based best practices in professional development, support, and training resources in order to effectively implement a CBE method at a university. The conceptual framework comprised of adult learning theory and competency-based education. Eight experts in competency-based education completed 2 rounds of anonymous questionnaires with open- and closed-ended questions. Data analysis involved a systematic process of coding and identifying themes. Results included a list of effective best practices for the professional development, support, and training resources that might be used to develop a community of practice online learning site for effective implementation of CBE methods. The results were further used to deliver a position paper that provided the research site with concrete descriptions of the important factors and mechanisms for CBE, as well as recommendations for action, including increased emphasis on Communities of Practice. Implications for positive social change include aiding higher education institutions in understanding the needs of faculty professional development, support, and training resources in a CBE method. In turn, adult learners who enroll in a CBE model will be able to attain a degree in less time and cost than in a traditional model, providing the learners with an opportunity to make an economic difference in society.

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Dedication

I would like first and foremost to give thanks to my husband and children. If it were not for their constant encouragement, I probably would not have completed this journey. I would also like to give thanks to Stacey, a very dear friend, for helping me on this journey. If I did not have your help, I certainly could not have done it. Your comments and guidance helped me make this study what it is. I would also like to give thanks to Jeanna for your words of encouragement and support along the way.

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Table of Contents

ii

List of Tables

List of Figures

Section 1: The Problem

In 2013, former President Barack Obama asked higher education leaders to review strategies that would offer affordable, high-quality degrees by 2020 (Ordonez, 2014; White House Office of the Press Secretary, 2013). Many economic benefits are available to individuals who obtain a college degree. Arguably, one of the most obvious is the potential to earn a significant higher amount of wages (Rothwell, 2016). According to (McFarland et al., 2017), adults who have a post-secondary bachelor's degree or graduate degree have an employment rate of 88%. Conversely, adults who have earned less than a bachelor's degree have a 77% employment rate (McFarland et al., 2017).

Individuals with a post-secondary degree are more employable, enhance the economy, and enhance society (Carnevale, Strohl, & Ridley, 2017). As a result, higher education institutions continue to identify opportunities for student degree completion to occur in less time and at an affordable rate. To accomplish this, one feasible, expert-recommended alternative is for higher education institutions to adopt a competency-based education (CBE) method (Klein-Collins, 2012; Shapiro, 2014; Soares, 2012).

A CBE method is an outcome-based approach that allows students flexibility to advance at their own pace as they complete their education, mastering specific skills in a competency (Gervais, 2016). Students are awarded credit based on mastery of identified competencies, allowing them to move on to the next set of competencies (Kelchen, 2015). A CBE method provides students the chance to complete their degree in less time and with less cost than a traditional model (Council of Regional Accrediting Commissions, 2015).

CBE methods are not new to higher education. Nodine's 2016 report on CBE shows three overall phases of the expansion of CBE in higher education. The first phase was in the late 1960s with the development of training for elementary school teachers to reform teacher education (Nodine, 2016). The second phase came about in the 1970s with the introduction of vocational education programs (Nodine, 2016). The third and most recent phase, introduced during the last decade and a half and offered through higher education institutions, gave students credit based on their previous knowledge and skills (Nodine, 2016).

The Local Problem

The problem addressed in this study was the identification of best practices for professional development, support, and training resources necessary for faculty in the implementation of a CBE model. A gap exists in both practice and literature about the professional development, support, and training resources for institutions intending to implement a CBE method (Curry & Docherty, 2017; Dragoo & Barrows, 2016). Dragoo and Barrows (2016) identified the need for professional development because of the unique demands that will be placed on faculty and their changing roles when a CBE method is implemented. Also, higher education institutions will need to support faculty members in their new roles as coaches and mentors, which is a change from their traditional faculty role (Balmer & Richards, 2012; Welch & Plaxton-Moore, 2017). For example, in Western Governors University's (WGU) CBE method, a faculty primarily mentors students instead of acting as the facilitator, as is seen in a traditional classroom (Johnstone, 2005).

Northern Pike University (pseudonym), located in Michigan, is a private, non-profit business university that offers two programs to undergraduate students. A residential campus employs a traditional undergraduate model. The adult learning program is an online and hybrid model with various locations, including entirely distance education. Students in the adult learning program are seeking programs with flexible options. The majority of students who enroll in the adult learning program already have some college credits and need to complete a degree with minimal cost and time.

Northern Pike University senior executive team is currently investigating the possible implementation of a CBE method. To assist in their investigation Northern Pike University reached out to Gartner, a research and advisory company, to obtain additional information on the future of CBE in higher education. Northern Pike University also conducted a literature review of the current and future state of CBE in higher education. Through its investigation to implementation of the CBE method to meet the needs of these adult learners, Northern Pike University has discovered many hurdles to overcome. One such issue to address is the professional development, support, and training resources necessary for faculty in the change to a CBE model.

Rationale

For Northern Pike University to successfully implement a CBE method, further research is needed to identify best practices for faculty professional development, support, and training resources. The professional literature at the national level also indicates there is limited literature on best practices for professional development, support, and training resources in a CBE method.

Evidence of the Problem at the Local Level

Currently, Michigan has the highest number of adults within the United States who have some earned college credits but no degree (Austin, 2015). Government leaders in Michigan, as in many other states, know that a strong economy is dependent upon the presence of an educated workforce. Employers require educated and skilled workers to meet the needs of today's growing economy and to compete globally (Adelman, Ewell, Gaston, & Schneider, 2014; Nodine & Johnstone, 2015).

CBE methods are increasing the awareness of opportunity for students to shorten their time-to-degree completion cost-effectively. Additionally, CBE methods are one of the most discussed pedagogical changes in higher education today (Cunningham, Key, & Capron, 2016; Curry & Docherty, 2017).

Northern Pike University knows that to meet the needs of Michigan's adult learners, a change to its current traditional learning environment is imminent. CBE methods change the pedagogical design from the traditional environment to a CBE environment (Newbold, Seifert, Doherty, Scheffler, & Ray, 2017). Tailoring the design of the faculty professional development, support, and training resources to a CBE method and ensuring coverage into all dimensions of a CBE academic model will increase the chances for successful implementation (Hartman, Bann, Barton, & Pearce, 2015). The training needs to cover all aspects of a CBE model from how to design a course around competencies to how to assess students, to how to deliver the content (Hartman et al., 2015). Faculty no longer set the pace, structure, and deliverables; instead, these educational elements are driven by students (Newbold et al., 2017). As shown in Table 1,

faculty roles are transformed in a CBE method from the all-in-one lecturer, assessor, and curriculum developer to separated roles: Individual faculty serving as assessors, mentors and coaches, instructional facilitators, community partners, and content and subject matter experts (Newbold et al., 2017).

Table 1

Comparison of Faculty Roles in Traditional Versus CBE

Educational dimension	Roles	
	Traditional	CBE
Instruction	Faculty inform the lecture; students listen and take notes	Faculty stimulates students to explore topics, ask questions, and create
Delivery	Faculty cover one topic in a given time period and move on to next topic in a linearly fashion	Faculty encourage exploration of topics in a holistic and nonlinear fashion
Resources	Faculty provide resources, at times when students request them	Faculty foster discovery of resources by promoting self-efficacy

Note. Adapted from "Ensuring Faculty Success in Online Competency-Based Education Programs" by C. Newbold, C. Seifert, B. Doherty, A. Scheffler, and A. Ray, 2017, *Journal of Competency-Based Education, 2*(3), p. 3.

Evidence of the Problem from the Professional Literature

Although there is a high volume of published literature describing the implementation of a CBE method, there is less literature on the implications for faculty teaching in a CBE method. A common theme in the current literature indicates the need for expanded professional development to assist faculty in the developmental elements outside of the traditional program curriculum (Bansal, Supe, Sahoo, & Vyas, 2017; Cooper, 2016; Cunningham et al., 2016; Defa et al., 2016; Lurie, Mason, & Parsons, 2018; Newbold, et al., 2017).

CBE is a fundamentally new pedagogical approach changing the landscape in higher education (Bansal et al., 2017; Defa et al., 2016; Newbold et al., 2017). In the CBE model, faculty would no longer teach students in a traditional teaching-centric model. Instead, faculty would act as coaches and mentors, both similar to and different from a traditional model (Echols, Neely, & Dusick, 2018; Newbold et al., 2017). For example, in a traditional teaching-centric model, faculty can rely on current teaching philosophies of classroom lectures, discussion, classroom activities, and just-in-time learning (Newbold et al., 2017). Faculty who teach in a CBE model, however, are in complete contrast to a traditional model. Students are the drivers of the pace, structure, and content deliverables as they decide what they learn and how long it takes them to master the competency.

In 2018, the National Survey of Postsecondary Competency-based Education (NSPCBE) surveyed participants to obtain a detailed assessment of the current state of CBE (Lurie et al., 2018). The NSPCBE included a wide range of key institutional stakeholders, such as policymakers, researchers, and educators who had either implemented a CBE program or were interested in adopting a CBE program (Lurie et al., 2018). Most noteworthy in the survey is the change in how faculty delivers content to students. Faculty roles are migrating from a teaching-centric to a learning-centric model, thus altering the current didactic teaching and learning philosophies to new a pedagogical paradigm. This change is expected to result in much needed professional development, support, and training resources for faculty who will be teaching in a CBE method (Curry & Docherty, 2017; Newbold et al., 2017).

The purpose of this qualitative study was to survey CBE experts in order to identify the professional development, support, and training resources best practices needed for Northern Pike University in its impending implementation of a CBE method. The results of this study have the potential to provide higher education institutions planning to implement a CBE method with an effective framework in developing professional development, support, and training resources for faculty.

Definition of Terms

Competencies: Competencies are defined as the student's ability to master specific skills that are measurable and observable (Everhart, Sandeen, Seymour, & Yoshino, 2014).

Competency-based education (CBE): CBE is an outcome-based approach to education that combines a variety of instructional methods to deliver assessments to evaluate a student's mastery (Gervais, 2016; Kelchen, 2015; Nodine, 2016). A CBE method allows flexibility of time for students to master competencies. Students demonstrate competency by mastery only and not by the amount of time spent on learning. Assessments are deliberate and aligned to the competencies to measure a student's learning and ability, which determines if the student has earned the credit.

Course/Credit-based: According to the Council of Regional Accrediting Commissions (2015), the course/credit-based approach is the demonstrated mastery of competencies embedded into the curriculum while the students earn credits for successful completion. Students still have the opportunity to accelerate their learning while demonstrating mastery of the competencies.

Credit hour: Credit hour is the amount of work represented by the content of the course to meet the identified learning outcome as verified by the student's achievement (Everhart et al., 2014). A credit hour is measured as not less than one hour of classroom engagement in addition to two hours of engagement outside the classroom (Everhart et al., 2014).

Delphi technique: The Delphi technique is a method of achieving a consensus on a specific research topic by using rounds of surveys. The Delphi technique is used to engage a group of experts to investigate a policy, to setting goals, and forecasting (Hsu & Sandford, 2010).

Mastery: Mastery is defined as the students' demonstration that they can complete a specific competency to show progression through a competency-based course (Everhart et al., 2014).

Seat time: Seat time is described as the amount of time a student spends in classes and is often used in conjunction with credit hour (Everhart et al., 2014).

Significance of the Study

Faculty roles in a CBE method are migrating from a teaching-centric to a learning-centric model, thus altering the current didactic teaching and learning philosophies to new a pedagogical paradigm. This change is expected to result in much needed professional development, support, and training resources for faculty who will be teaching in a CBE method (Curry & Docherty, 2017; Newbold et al., 2017). Faculty who decide to embark on the CBE model movement need to have certain levels of skills and ability to successfully transition to the new CBE pedagogical paradigm (Hartman et al.,

2015). Hartman et al. (2015) stated to ensure faculty have the skills and ability needed, timely and effective faculty professional development, support, and training resources is crucial. The problem addressed in this study was the gap in practice for faculty professional development, support, and training resources needed when implementing a CBE method. The experts from a higher education institution located in Michigan that is currently offering a CBE method has provided the knowledge and best practices in professional development, support, and training resources to help solve this problem.

Insights from this study have the potential to contribute to positive social change by aiding higher education institutions in Michigan—and globally—in understanding the needs of faculty professional development, support, and training resources in a CBE method. Michigan currently ranks 38th in the nation for rate of personal income, with the number of adults who have a bachelor's degree or higher at 29.6% (U.S. Census Bureau, 2015). Michigan's governor recognizes the need to incorporate a CBE model to transform Michigan's talent pipeline not only for young adults but also potentially for adult learners (Ackley, 2018). Adult learners who enroll in a CBE model versus a traditional model will be able to attain a degree in less time and cost, providing the learners with opportunity to make an economic difference in society and to create a positive social change (Gardner, 2017).

Research Questions

A gap in practice was identified with respect to faculty professional development, support, and training resources needed when implementing a CBE method. In this qualitative study, I looked to experts for identification of the knowledge and best

practices for professional development, support, and training resources needed for faculty

who will be teaching in a CBE model. Faculty and staff who were currently involved in

CBE methods were engaged to provide expertise for this study. The following research

question guided this study:

RQ1: What do experts identify as significant in faculty professional development

for CBE teaching faculty?

RQ2: What do experts identify as significant in supporting CBE teaching faculty?

RQ3: What do experts identify as significant for training resources for CBE

teaching faculty?

Review of the Literature

The focus of the literature review for this study was in the areas of faculty

professional development, support, and training resources in a CBE method. In this

section, I describe the conceptual framework, an overview of the literature, and the

themes discovered in the areas of faculty professional development, support, and training

resources.

Conceptual Framework

Adult learning theory, also known as andragogy, and a competency-based

structure have both been defined as learner-centric methods (Ford, McNally, & Ford,

2017; Knowles, Holton, & Swanson, 2005). A learner-centric model, as used in the CBE

method, is positioned on the adult learner, who brings a certain amount of prior

experience and knowledge and in which the lecturer does not possess all the knowledge

(McGrath, 2009). In a learner-centric model, the student is encouraged to participate, if

not facilitate, the classroom by sharing prior experiences and knowledge (McGrath, 2009). In the CBE method, students set the pace, deciding how fast or slow they will progress through the program. Students who enroll in a CBE method are motivated to complete their degree in as little time as possible. The adult learning theory applies to this study because applying prior experience, knowledge, and motivation to learn are the foundation of CBE methods.

Within a CBE method, there is a heavy focus on the adult learner, which supported concepts of adult learning theory explained by Knowles et al., (2005). For example, Knowles et al. (2005) identified six principles of andragogy that are frequently used to measure effective practices in adult education: (a) learners need to know, (b) learners motivation to learn, (c) prior experience of the learner, (d) readiness to learn, (e) orientation to learning, and (f) self-concept of the learner. CBE and the adult learning theory are both centered on students applying prior experience and knowledge and allowing for self-direction, such as setting a pace that functions best for them. Students can progress as quickly or slowly as they prefer and no longer are bound by time in-seat. Also, a CBE method uses real-world assessments, which aligns to adult learning theory because the adult learner can relate directly to the real-life situations. Further, alignment of competencies to real-life situations provides students with the motivation to learn and engage by applying their prior experiences in addition to current knowledge.

In addition to students applying their prior expereinces and current knoweldge in CBE method, faculty members can also make these same connections from individual experiences by applying prior educational knowledge, interpreting, and expanding their

own learning experiences in a CBE model. A CBE method is more than just another delivery mode; it challenges faculty who have taught for years—perhaps by using the same convention throughout time in the classroom—to think differently about the development of curricula, how instruction is designed, and how students are assessed (Lurie & Garrett, 2017). Faculty is the exact representation of an adult learner who is exposed to different experiences inside and outside of a classroom. Learning is never indeed finalized; instead, it is a learning continuum that spans throughout life as one faces different emphases, strategies, and problems. Therefore, learning becomes a reciprocal experience for students and faculty. Faculty in a competency-based structure will need to embrace the new learning pedagogy and a different way of thinking about educational outcomes (Hartman et al., 2015).

Review of the Broader Problem

I conducted a literature review to obtain additional information on the professional development, support, and training resources needed for faculty to be successful in a CBE method. To locate current and relevant scholarly readings to support this study, the following databases and journals were explored: ERIC, ProQuest, SAGE Research Complete, Academic Search Complete, *The Journal of Competency-Based Education, International Journal of Doctoral Studies, Journal of Continuing Higher Education, Journal of Education for Business,* Education Next, *International Journal of Instruction,* all located through the Walden University Library website. I also searched Google Scholar using the same search procedures.

A variety of combinations of keywords and Boolean phrases were used, including: *competency-based education, CBE, professional development, higher education, faculty buy-in, faculty resources, andragogy, pedagogy, CBE best practice in faculty development, definition of an expert in higher education, expertise,* and *faculty development*. These searches provided a plethora of results. Other sources primary to the topic of CBE included private and nonprofit organizations, such as the Lumina Foundation, Competency-Based Education Network, and the Council for Adult and Experiential Learning (CAEL).

There are several recent articles on CBE processes and implementation in the literature. However, there are limited studies and articles on the topic of faculty professional development in a CBE method. Research on faculty professional development, support, and training resources in a CBE method is scarce because of the variety of CBE methods used by higher education institutions (Echols et al., 2018).

After I reviewed the abstracts, I narrowed the the scope by selecting studies related most closely to the research questions. Seminal works were included in the literature review, providing a potential contribution to the conceptual framework and history of CBE in higher education. Studies that addressed faculty professional development concerning CBE were reviewed, analyzed, and synthesized to elicit themes. Additionally, studies that addressed the definition of experts in higher education were reviewed, analyzed, and synthesized to elicit themes. Through the combination of studies and synthesis, I discovered a clear connection to the conceptual framework.

For the literature review, I thematically grouped and organized by topics of importance in terms of theoretical constructs: (a) a history of competency-based education, (b) faculty professional development, (c) design and implementation of a CBE method, (d) faculty acceptance, and (e) what constitutes an expert in higher education using a Delphi method.

History of competency based education. Due to recent increased demands for accountability and affordability from policymakers, CBE methods have been increasingly implemented in higher education (Brower, Humphreys, Karoff, & Kallio, 2017; Burnette, 2016; Dragoo & Barrows, 2016; Echols et al., 2018; Kelchen, 2015; Ordonez, 2014). This renewed interest in CBE has leaders of higher education institutions considering how demands of accountability and affordability by current and prospective students can be met. Several public and private organizations also focus interest on CBE methods, including CAEL, Lumina Foundation, Bill and Melinda Gates Foundation, and the U.S Department of Education (Burnette, 2016; Curry & Docherty, 2017). These public and private organizations provide grant support to gain a better understanding and to share findings to help educational institutions appreciate the scope of CBE (Nodine, 2016).

A variety of CBE methods have been integrated within higher education programs for a half-century, starting with the reform of teacher training and vocational programs in the 1960s and 1970s (Nodine, 2016). In the 1970s, institutions started seeing a need for ways to expand educational access for adult learners (Nodine, 2016). Institutions began offering CBE programs to meet the needs of the adult learner, which changed the options for working adults to obtain or complete a degree (Nodine, 2016).

Leading the CBE movement is WGU. In 1997, a group of 19 governors came together to discuss economic concerns in their states, such as the rising cost of higher education and colleges and universities graduating students whose skills- including technology-based- were insufficient for the needs of the future workforce (Johnstone, 2005). As a result, WGU launched an online program granting degrees that did not base completion on seat time but rather on students' mastery of competencies (Nodine, 2016). WGU regarded the traditional clock-hour as an insufficient way of measuring students' knowledge; instead of awarding credits and grades, the institution wanted to measure a student by using a variety of assessments, which aligned specified competencies to the degree (Johnstone, 2005). WGU's model is not the only CBE model in operation. Today, many institutions have developed a version of CBE. However, WGU is the leading force of the CBE model (Nodine, 2016).

With the renewed interest in CBE, there has been a significant increase in schools intending to implement or that have implemented a CBE method. Fain (2016) reported approximately 600 postsecondary institutions were in the designing or implementing phase for CBE programs. In a 2018 study conducted by the NSPCBE, a comprehensive assessment of the current state of CBE was conducted (Lurie et al., 2018). The NSPCBE findings were based on responses of 500 colleges and universities in regard to interest in CBE or activity related to CBE (Lurie et al., 2018). Four hundred thirty institutions reported either an interest in adopting or that adopting a CBE program was already in process (Lurie et al., 2018).

Faculty professional development. My review of the literature provided a

wealth of information about faculty roles in a CBE method. However, there is little focus on the impending change from a teacher-centric model to a learner-centric CBE model, or the implications for faculty (Ashby, Caskurlu, & Exter, 2018; Gruppen et al., 2016).

In a CBE method, students drive the pace, deliverables, and structure of the course; in contrast, in a traditional teacher-centric method, faculty controls the pace, deliverables, and structure (Newbold et al., 2017). In the traditional teacher-centric method, faculty is accustomed to playing the pivotal role in the development and delivery of curriculum, as well as the academic programs. Also, faculty understand the processes of academic programs and curriculum design by imparting knowledge onto students with the intent of students successfully passing the final exam (Cooper, 2016). However, in the CBE method, faculty may feel less than adequate, perhaps even feeling underqualified, in functioning in the different roles associated with teaching in a learner-centric method (Newbold et al., 2017).

For faculty to meet the changing pedagogical format, a variety of ongoing professional development learning applications will be needed (Chacko, 2014). The learner-centric method, as used in the CBE method, requires faculty to receive additional support. Some examples include how to provide feedback using an outcomes-based rubric, how to gather learning resources for the CBE paradigm, understanding CBE standards, learning CBE curriculum expectations, developing competency statements or outcomes, and developing CBE curriculum (Bansal et al., 2017; Chacko, 2014; Cooper, 2016; Defa et al., 2016; Newbold et al., 2017).

Developing a CBE curriculum or course is not as simple as making modifications to courses that are currently in place and labeling them as CBE. Faculty will need to have a clear understanding of what a competency is to dissect course content in a way that clarifies specifically what students should be able to master by the end of the course (Chacko, 2014). Faculty development skills will need to be expanded, including not only the essential elements of curriculum design but also in how current learning outcomes can be converted to competencies based on industry needs while developing high-level vetted formative and summative assessments that align with the desired competencies (Chacko, 2014; Rossing & Lavitt, 2016).

Newbold et al. (2017) identified how faculty roles are changing in a CBE method, as well as the challenges that faculty may encounter. By identifying potential new faculty roles, institutions will gain a better understanding of the types of professional development needed for each role (Cooper, 2016; Newbold et al., 2017). Newbold et al. (2017) provided an in-depth list of the possible faculty roles required in a CBE model: (a) instructional faculty, (b) assessment faculty, (c) mentor/coach, (d) course designer, (e) subject matter expert, and (f) community partnership faculty.

Instructional faculty will provide the live classroom sessions, either in an online or face-to-face setting, providing detailed information on the competencies for a particular course (Newbold et al., 2017). The instructional faculty provides information, course and institutional resources, and direction to empower students to be self-motivated and to think critically to explore topics and generate discussions, and to ultimately master the specific competency (Newbold et al., 2017).

Assessment faculty will assess student assignments with the use of rubrics and specific feedback on whether the student met the competency (Newbold et al., 2017). The assessment faculty role allows for feedback to be provided objectively—and much more quickly—because facilitation of the content is not a component of the role (Newbold et al., 2017).

Mentors and coaches will provide interactive guidance to students, as well as communicating time management, writing and presentation skills, personal challenges, and more (Newbold et al., 2017). Content and subject matter experts focus on creating and designing the content in conjunction with instructional design teams (Newbold et al., 2017).

The final role Newbold et al. (2017) described is community partnership faculty, which is an essential step in the CBE method (Newbold et al., 2017). In the community partnership role, faculty identifies partnerships to "facilitate project-based initiatives in service-learning contexts" (Newbold et al., 2017, p. 8). Faculty at the community partnership level will work with the community and prospective employers of graduates to identify what is required from an educational institution to ensure students are successful in real-world applications (Newbold et al., 2017).

The CBE method unbundles the faculty role from the traditional method, creating distinct identities in the redefinition of faculty responsibilities (Newbold et al., 2017). One of the issues with this new pedagogical method is many institutions have not fully decided which CBE method will be adopted, making it challenging to provide the professional development and support faculty will need (Newbold et al., 2017). In a CBE

method, faculty roles are more reactive than proactive simply because faculty does not know how students will engage with the content and learning resources since students move at their own pace (Newbold et al., 2017).

Higher education institutions will need to ensure that all stakeholders have a clear understanding of the needs for faculty teaching in this new learning paradigm (Cooper, 2016). Cooper (2016) shared the successful implementation of a CBE method concurred by using intentional strategies to provide faculty support. From the literature review, there is minimal research on faculty professional development and the resources needed. Therefore, relying on experts who currently teach in a CBE method is crucial in the design of strategies for providing support.

Design and implementation. According to the articles reviewed, designing and implementing a CBE method is one of the most challenging aspects when implementing a CBE method. Institution leaders describe many factors that created challenges, such as defining what a competency is, or once defined how to create an outcome-based educational program that measures learning not based on seat-time but around the attainment of the outlined competencies (Gruppen et al., 2016).

The practice of defining competencies has existed for years. However, the most familiar in education would perhaps be the taxonomy designed by Benjamin Bloom in 1956 (Morcke, Dornan, & Eika, 2013). Bloom's Taxonomy is a classification of the different competencies and skills that faculty use to develop student learning objectives. Educators use the six levels of learning of Blooms' taxonomy when structuring learning objectives, competencies, and assessments. The six levels of learning progress from low

to high (Morcke et al., 2013). Remembering, understanding, and applying are the elements of the lower level (Morcke et al., 2013). The higher learning level includes analyzing, evaluating, and creating (Morcke et al., 2013).

Since the design and update of Bloom's Taxonomy, the adoption of competencies is widely used. For example, in the medical field, the Association of American Medical Colleges has approved a competency-based learning approach and standardizing learning outcomes for medical education as a way of assessing students (Morcke et al., 2013).

Ott, Baca, Cisneros, and Bates (2015) conducted a study describing how their institution designed competencies for a master's degree in higher education administration. Ott et al. (2015) offered their approach as a template for others who do not have a set of standards to guide CBE development. Lucas and Rawlins' (2015) approach used a core competencies grading rubric for introductory business communication courses. According to Lucas and Rawlins' (2015) findings, implementing a CBE method is not reinventing the curriculum; instead, it is taking the existing curriculum and positioning it to a new level of knowledge and best practices.

Morris, Webb, Fu, and Singhal (2013) described how they used the Delphi method for developing competencies in entrepreneurial education. Morris et al. (2013) developed a set of 13 entrepreneurial competencies to determine and define the skills and abilities critical for entrepreneurial success. In another study, performed by Kang et al. (2013), the Delphi method was used to build a consensus regarding competencies to improve performance and to standardize education programs for hospice and palliative care professionals.

No matter the approach used, before implementing a CBE method in academic programs, the definitions of intended competencies should be specific enough for faculty to facilitate the intended assessment (Voorhees, 2001). The design of learning experiences based on CBE has led the way for higher education institutions to implement a CBE method that awards college credit based on the achievement of competencies rather than the student's time spent in the classroom. Everhart and Bushway (2014) provided a list of quality indicators to define competencies: valid and reliable assessments, curricular architecture, and comprehensive student success resources. Likewise, Johnstone and Soares (2014) described the fundamental indicators of competencies: robust and valid competencies, effective learning resources, secure and reliable assessments, and student support through a self-paced method.

Faculty acceptance. The higher education landscape has changed considerably, especially in recent years, with the movement toward a CBE method. Higher education leaders and faculty realize that to serve an ever-changing student population, new teaching and learning innovations and methods are needed (Kezar & Maxey, 2015). Identifying CBE faculty roles is just one of the implementation challenges higher education institutions need to consider before moving to a CBE method (Klein-Collins, 2016; Lurie et al., 2018). Instructional roles in a CBE method do not follow traditional teaching. In fact, faculty roles often split into multiple roles, such as those of developing the curriculum, designing and grading assessments, and coaching/mentoring (Klein-Collins, 2016; Lurie et al., 2018; Newbold et al., 2017).

As stated previously, there are many different CBE methods implemented across higher education institutions, thus fundamentally reframing the traditional faculty role (Newbold et al., 2017). One of the challenges faculty instructing in a CBE method face is the changing job descriptions and the need to adapt to a new pedagogical method that has not yet been defined (Newbold et al., 2017). Skepticism of CBE may occur because faculty members are not part of the discussions regarding the change in the higher education landscape (Selingo, 2015). Over 90% of faculty are not completely on-board in either supporting or growing the development of CBE (Selingo, 2015).

Obtaining faculty acceptance when implementing a change such as CBE will result in complications, especially with concerns from faculty on the "displacement or change in roles and status" (Ford, 2014, p. 8). Ford (2014) indicated that how faculty is educated on the different aspects of a CBE method will also have a significant impact on faculty acceptance. Faculty is very familiar with current methods of teaching, particularly in measuring student learning through seat-time versus measuring student learning through competencies.

Because faculty currently have little understanding of how CBE works and how it will affect teaching and institutional roles, there is a certain level of uncertainty. Faculty will still engage with students but not in the more common teacher-centric method. For example, in the direct assessment programs offered by WGU and Southern New Hampshire's University College for America programs, faculty roles are of mentor/coach versus that of a facilitator (Adelman et al., 2014; Klein-Collins, 2012; Mendenhall, 2012). At WGU, the faculty role is divided into multiple tasks and responsibilities:

advising, content help, grading, mentor, assessment design, learning materials, and course development (Mendenhall, 2012).

      Defining an expert. To answer the research questions posed in this study, it is necessary to have a clear understanding of what classifies an expert, as well as what unique characteristics an expert has that defines them as an expert (Holtskog, 2017). Webster's online dictionary defines an expert as someone who has a unique skill or received knowledge from training or experience and has represented mastery of a particular subject ("Expert," n.d.). In academia, an expert is someone who holds exceptional knowledge in his or her field of study. Furthermore, terms such as *masters*, t*eachers*, and *professors* are also noted as synonymous with experts in a field (Amirault & Branson, 2006; Holtskog, 2017).

      Unique characteristics are a component of identifying an expert. Holtskog (2017) investigated the study completed by Goffee and Jones, who identified nine characteristics of experts. Goffee and Jones (as cited in Holtskog, 2017) looked at the expert's identity and social factors, such as skills and worth, to provide the foundation of what makes someone an expert (Holtskog, 2017). A person who sees himself or herself as an expert identifies with the following characteristics: competence, knowledge, and knowledge of details others do not know (Holtskog, 2017). Experts are defined as those who are on top of their trade and who are well connected with other likeminded individuals (Holtskog, 2017).

In Avella's (2016) research about understanding the Delphi method, Avella provided an example of what might constitute an expert in a participant group of college faculty:

> Establish an academic rank (e.g., Associate Professors or above), having achieved tenure, or a minimum time on faculty criterion, and select faculty meeting that threshold while representing different academic disciplines. (p. 306)

For this study, a combination of academic rank and identification of faculty and staff experts who were designing, implementing, or teaching and have significant practical experiences in a CBE method were considered experts. Also, those who provide specialized support, such as instructional technologists and administrators, were considered experts. These individuals had developed or delivered professional development or were individuals who had facilitated in a CBE method. The goal of using experts was to create a common framework for the design and delivery of CBE professional development, support, and training resources. The results of this study have the potential to provide a common framework for professional development designers and leaders in higher education to use in informing professional development in this new pedagogical paradigm.

Summary of the Literature

With the increased demand for accountability and affordability from policymakers, higher education institutions are looking to CBE as a viable option and with renewed interest (Brower et al., 2017; Burnette, 2016; Dragoo & Barrows, 2016;

Echols et al., 2018; Kelchen, 2015; Ordonez, 2014). The resurgence of CBE has resulted

in a noticeable increase in schools intending to implement a CBE method. In 2016,

approximately 600 postsecondary institutions were in the designing or implementing

phase (Fain, 2016). In 2018, a study by the NSPCBE found 430 schools reported interest

in adopting or were in process of adopting a CBE method (Lurie et al., 2018). In addition

to higher education institutions, there has been a great deal of interest from public and

private organizations, including by providing financial support to educational institutions

to achieve a better understanding of the CBE resurgence (Burnette, 2016; Curry &

Docherty, 2017).

Within the implementation of a CBE method, the research indicated a reframing

of the traditional faculty role (Cooper, 2016; Lurie et al., 2018; Newbold et al., 2017).

The research literature indicated there are numerous roles faculty could fall into in the

implementation a CBE method, such as mentors, coaches, planners, curricular architects,

component champions, assessment faculty, community partners, and subject matter

experts (Cooper, 2016; Lurie et al., 2018; Newbold et al., 2017). In a study by NSPCBE,

identifying a faculty's new role was indicated as being a potential challenge in CBE

implementation (Lurie et al., 2018). As shown in Figure 1, 12 possible roles were

identified in the NSPCBE study (Lurie et al., 2018). Within each of these roles, there is

an identified need for faculty professional development, as faculty no longer teach in a

teacher-centered model but a learner-centered model.
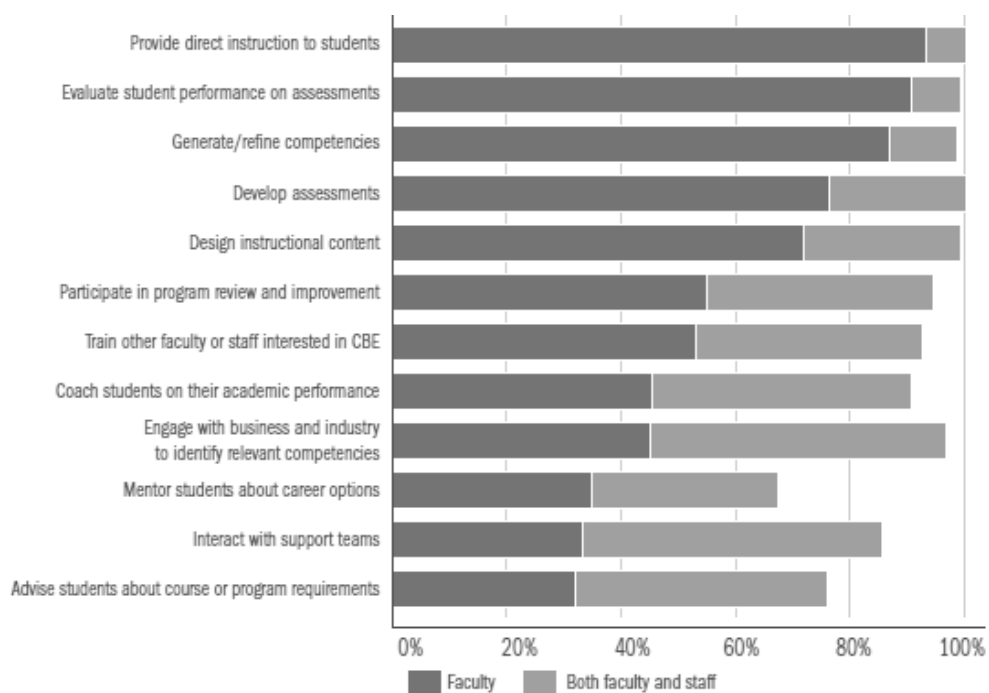
Figure 1. Faculty roles in CBE. Reprinted with permission from "State of the Field: Findings from the 2018 National Survey of Postsecondary Competency-Based Education (NSPCBE)," by H. Lurie, J. Mason, and K. Parsons, 2018. Retrieved from https://www.air.org/sites/default/files/National-Survey-of-Postsec-CBE-2018-AIR-Eduventures-Jan-2019.pdf.

Chacko (2014) stated that most faculty is "ill-equipped" when it comes to implementing a CBE method. Because of this, faculty will need on-going professional development to ensure that a return to the teacher-centric approach does not continue (pp. 251). Chacko (2014) also noted that with the shift in the teacher-centered to the learner-centered approach, there is a change in faculty roles in the areas of curriculum design, communication, analytical skills, performance assessment tools, and student feedback. Also, Bansal et al. (2017) noted faculty development will be integral to the successful implementation of a CBE method, as there is a significant shift in the teacher's traditional

role. A CBE method requires faculty development to provide training on how to shift curriculum approaches from teacher-centered to learner-centered (Bansal et al., 2017).

Echols et al. (2018) also stated that by adopting new faculty roles, there is an increased need for faculty professional development. Within the new faculty roles, there are inherited new responsibilities, especially in the area of curriculum development (Echols et al., 2018). The new curriculum is based on the mastery of competencies rather than the amount of time spent in-seat (Echols et al., 2018). In their study, Echols et al. (2018) concluded that much work needs to be done in identifying solutions to what type of professional development, support, and training resources are needed.

The research literature also presented a challenge in the design and implementation of a CBE method. One such challenge is defining what a competency is and, once defined, how to equate learning not based on seat-time but around the mastery of the outlined competencies (Gruppen et al., 2016). The design of competencies is not new to higher education. This system has been around for years, using Bloom's Taxonomy, the most notably known levels of learning (Morcke et al., 2013). In addition to Bloom's Taxonomy, a study conducted by Lucas and Rawlins (2015) made use of a grading rubric to identify core competencies in business communication. Morris et al. (2013) used a Delphi method in their study to reach a consensus in the development of 13 entrepreneurial competencies. The Delphi method was used in another study by Kang et al. (2013) to build a consensus in the development of competencies in a health program. Defining competencies is not an easy task and one that the research literature has identified as a challenge in the implementation of a CBE method. The use of quality

indicators should be taken into account when developing competencies to ensure they are robust, valid, and support a self-paced method (Everhart & Bushway, 2014; Johnstone & Soares, 2014).

Although there is research related to the need for professional development, there is a gap in the research literature on best practices for the types of professional development needed. The research literature provides a solid foundation for the need of professional development. However, this study was necessary to address the gap in evidence-based practice in best practices for developing professional development, support, and training resources for a CBE method. Using a Delphi method allowed for the identification of best practices to benefit future professional development in a CBE method.

Implications

Higher education institutions continue to face issues such as rising costs and rising student loan debt (Ordonez, 2014). Policymakers and the public are questioning the value of a postsecondary degree. A CBE method is one option that can lead to a decrease in student debt and acceleration of degree completion, creating a positive social change on how the public views higher education.

The goal of this study was to provide insight into the faculty professional development, support, and training resources needed for higher education institutions planning to implement a CBE method. The aspiration was to provide the groundwork to develop policies for faculty professional development, support, and training resources needed as CBE continues to grow.

Using the Delphi method, the project deliverable is a position paper summarizing the research results, including available evidence-based recommendations for higher education leaders and faculty professional development designers to guide in their CBE development efforts. A second option for the project is the design of a professional development course offered in an online or face-to-face format. To fully support faculty in every aspect of implementing a CBE method, faculty professional development must be specifically tailored to meet the needs of faculty. The professional development would need to cover items such as the philosophy of CBE, how a course is designed using CBE methods, how to write competencies, and how to develop assessments that align to competencies (Hartman et al., 2015).

Summary

Section 1 included a look at the local problem, the significance of the study, review of the literature, and the implications. Competency-based education continues to capture the attention of higher education institutions as a means to an end (Lurie & Garrett, 2017). In recent years, there has been a great deal of scrutiny about the quality and cost of higher education. In 2013, then-President Barack Obama challenged leaders of higher education to look at strategies that could provide affordable, high-quality education by 2020 (Ordonez, 2014; White House Office of the Press Secretary, 2013). That same year, the Department of Education announced its experimental site program in which several universities and colleges were awarded the opportunity to allow students to obtain college credits through competency-based assessments (Cunningham et al., 2016).

With the renewed interest in CBE, higher education institutions are taking a keen interest in the design and implementation of a CBE method. The problem addressed in this study was identifying best practices on the topics of faculty professional development, support, and training resources for higher education institutions planning to implement a CBE method. Administrators, faculty, and professional development staff at higher education institutions will have the opportunity to use the results to assist in the implementation of a CBE method. The project deliverable might serve the field of higher education and Michigan-based institutions of higher education, in particular, with the evidence-based recommendations to implement faculty professional development, support, and training resources needed as CBE continues to grow.

In Section 2, a detailed discussion on the qualitative Delphi method is presented, in addition to a detailed explanation of the research design and approach, including potential participants, data collection methods, data analysis, and limitations of the research. The use of the qualitative Delphi method allowed collaboration with experts in the field of CBE to come to a consensus regarding best practices for faculty professional development, support, and training resources.

Section 2: The Methodology

Research Design and Approach

The purpose of this qualitative study was to elicit experts informed opinions to identify best practices for professional development, support, and training resources needed for Northern Pike University and its implementation of a CBE method. In this section, I describe the research design and approach, along with the rationale for using the Delphi method of inquiry. The criteria for selecting participants are discussed in this section, and data collection and analysis procedures are also presented. I also discuss the assurance of accuracy and credibility. This section concludes with a discussion about the potential limitations of the study.

Qualitative Research Design and Rationale

A qualitative research method was selected for this case study because it provided an opportunity to explore the themes and questions, unlike quantitative research, where the variables are usually pre-posited. The purpose of this study was to identify an effective framework of best practices, not just one effective best practice. A qualitative case study allowed the ability to obtain different perspectives from a variety of experts, instead of seeking insights from one expert who may or may not have experience in all three themes: (a) professional development, (b) support, and (c) training resources.

I chose a Delphi technique for this qualitative study. A Delphi technique is a method used to build a consensus by facilitating a discussion between experts in a field of study where a concept or construct does not exist (Yousuf, 2007). In the context of this

study, the goal was to identify an effective framework of best practices, not just one effective best practice. A Delphi method qualitative case study allowed me to obtain different perspectives from a variety of experts, instead of seeking insights from one expert who may or may not have experience in all three themes: (a) professional development, (b) support, and (c) training resources. Results of the study include a list of effective best practices that may be used to develop a professional development, support, and training resources for faculty in a CBE method.

Using the Delphi method helped to develop consensus by allowing CBE experts the responsibility of making judgements about the best responses relating to the best practices for professional development, support, and training resources needed in the implementation of a CBE method. Although other survey methods could have been deployed, using a Delphi method allowed the experts to participate in the judgment of the responses. A Delphi method also allowed for anonymity of the participants, which permitted more open feedback than in a face-to-face setting where interpersonal dynamics could possibly skew the results.

The Delphi Method

The Delphi method is a method used to achieve the opinion of a group of experts around a central problem (Dalkey & Helmer, 1962). The Delphi method allows the researcher to obtain responses from a panel of experts without having the panel in a face-to-face setting where dominant individuals could influence the responses, noise, and group pressure for conformity (Dalkey, 1969). A Delphi study is conducted by having experts respond multiple times to a specific topic to achieve a consensus (Yousuf, 2007).

Using the Delphi method provides the opportunity to obtain multiple expert opinions to determine if there is a consensus related to professional development, support, and training resources for CBE faculty.

There are three essential features associated with the Delphi method: (a) anonymity, (b) controlled feedback, and (c) statistical group response (Dalkey, 1969; Murry & Hammons, 2017). The Delphi method is based on the notion of allowing participants to voice independent opinions that would lead to reliable conclusions and consensus by collecting and synthesizing the opinions of a panel of experts (Avella, 2016; Dalkey, 1969; Keeney, Hasson, & McKenna, 2005; McPherson, Reese, & Wendler, 2018; Murry & Hammons, 2017). The Delphi method is uniquely appropriate in areas where there has been minimal prior research, allowing the researcher to obtain a collection of subjective findings of a panel of experts (McPherson et al., 2018). With little research on the topic of faculty professional development, support, and training resources in a CBE method, utilization of the Delphi method provided multiple perspectives from experts to build an effective framework of best practices.

Participants

In the case study method, the researcher examines an event, program, activity, or an individual in a bounded system or single setting (Creswell, 2012). One higher education institution currently using a CBE method served as the bounded system for this study. The institution is referred to a School A throughout this study.

Sample and Setting

School A was purposefully sampled to engage in the case study. Purposeful sampling involves researchers selecting "particular subjects to include in the study who they believed to facilitate the expansion of developing theory" (Bodgan & Biklen, 2007, p. 73). The number of participants in the Delphi method can vary from 10 to more than 1,000; there is no size limit required for a Delphi method study (Avella, 2016; McPherson et al., 2018). For this study, a sample of 25 participants was purposefully selected to obtain a minimum sample size of 10. The initial participants were selected by the CBE coordinator from the faculty teaching in the CBE method at School A.

In academia, experts are defined as individuals who hold exceptional knowledge in their field of study (Amirault & Branson, 2006; Holtskog, 2017). For this study, experts included faculty and staff with earned academic rank and who had significant experience in CBE. The goal of using experts was to create a common framework for the design and delivery of CBE professional development, support, and training resources.

According to School A's Common Data Set of 2018-2019, 3,527 faculty members comprised of 2,888 (82%) full-time faculty and 639 (18%) part-time faculty. There are 2,619 (74%) full-time faculty with a doctorate or terminal degree, and 483 part-time (16%) faculty with a doctorate or terminal degree. School A's CBE program has 17 faculty members with a doctorate or terminal degree and various academic rank, such as vice president, assistant professor, associate professor, and division chief. The school has a department comprised of 21 staff members who are exclusively dedicated to faculty professional development, support, and training resources.

Procedures for Gaining Access

The study took place in a university setting. I contacted the school's Institutional Review Board (IRB) to gain approval for conducting research. Once permission was granted from School A, I shared the approval with Walden University's IRB to obtain permission to move forward with the research. Upon obtaining permission, I contacted the CBE program department lead to determine a non-intrusive interview and survey schedule.

Researcher-Participant Relationship

I used Patton's (2003) Qualitative Checklist as a guide in establishing the researcher-participant relationship. Adhering to Patton's (2003) checklist, the ethics issues portion of the checklist was particularly necessary because this provided me with a guide to avoid ethical challenges. I established working relationships with the participants via email. Through email, I shared with the participants: (a) the estimated time required, (b) the purpose of the study, (c) my role as the researcher, and (d) how vital their engagement was throughout the study. I explained to the participants they had the opportunity to advance best practices in the way professional development, support, and training resources are developed for others in CBE. I believed that creating a sense of ownership helped ensure participation retention, which was essential to the integrity of my study.

My role as the researcher in this study was to find expert participants and to collect and analyze data. I had no relation with the participants, either professionally or personally.

Protection of Participants

Of utmost importance was respecting the participants and protecting the confidentiality of their participation. Measures were put into place to safeguard participants from any detrimental effects, including unethical influence or bias. I provided the participants the consent form and link to the questionnaire via email invitation. All participants replied to the email, which confirmed their consent to participate.

I also adhered to boundaries for the data collection that were placed on me through the participants' school to maintain ethical expectations. All data collected has been kept confidential, and pseudonyms have been used to protect the site and participants in the final report of the study. A password-protected Excel spreadsheet, which includes the names of the individuals, emails, and phone numbers are being kept on a password-protected computer and back-up flash drive.

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Data Processing

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Data Collection Strategies

The Delphi method is a form of iterative analysis that was built based on ongoing data collection. There were two rounds of questionnaires deployed to the participants via e-mail, included was a link to complete the questionnaire via Survey Monkey (an online survey tool). The questionnaires consisted of open- and closed-ended questions. In Round 1, I asked participants to brainstorm on the topics of professional development, support, and training resources. In Round 2, I asked participants to review the list of statements

for verification and clarification. In the next section, the two rounds of data collection are described.

Collection of data occurred over six weeks. A panel of eight CBE experts participated in the Delphi study. Two rounds of questionnaires, hosted by the online platform Survey Monkey, were distributed to the panel of experts through email communication. In the Round 1 questionnaire, seven out of the eight-panel of experts completed it. In the Round 2 questionnaire, all eight of the participants completed it.

In this section, the results of the data collection from the Delphi study are presented. Using memos throughout the data collection and analysis process, bracketing occurred. Using the memo method of bracketing allowed me to develop theoretical notes, which allowed me to explore my feelings about the research project (Fischer, 2009; Tufford & Newman, 2012). Also, I used a combination of methodological triangulation and member checking to further the credibility of identified codes and themes. Methodological triangulation was achieved through using questionnaires, a thematic map, and the literature.

Generation of Data

The first step in getting the required data was to contact the research site CBE coordinator and explain the proposed research. For example, what the Project Study consisted of, the purpose, the planned research, including data handling and confidentiality, etc. After obtaining the required permission, the CBE coordinator identified eight prospective experts to participate in this study.

Specifically, on June 24, 2019, to obtain a letter of cooperation and support to participate in the Delphi study, I sent an email invitation to the research site CBE coordinator (Appendix C). On June 24, 2019, I received the letter of cooperation and support and forwarded it to Walden's Institutional Research Board for final approval. Final approval was received on July 23, 2019, approval number 06-18-19-0243191. On July 24, 2019, I sent an email to the research site CBE coordinator to request a list of potential participants for the Round 1 questionnaire (see Appendix D).

The CBE coordinator reached out to participants identified as CBE experts, by the research site coordinator; eight participants were identified. On August 5, 2019, I sent an email invitation to the eight potential participants asking for their participation in the study (see Appendix E). The participants completed informed consent. One additional follow-up email reminder was sent on August 15, 2019 (see Appendix F) to the participants, requesting participation in the questionnaire.

On September 5, 2019, for Delphi Round 2, I sent email invitations to the eight participants (see Appendix G). An additional email was sent on September 15, 2019, for the participants who had not yet completed the questionnaire (see Appendix H).

Round 1 Questionnaire

The Round 1 questionnaire served as the cornerstone to solicit information about the professional development, support, and training resources to use in the development of the ongoing data collection. The Round 1 questionnaire consisted of open-ended questions asking the participants their opinions on the topics. I sent the participants the Survey Monkey questionnaire link within the invitation to participate via email.

Participants were given two weeks to respond. A reminder e-mail was sent reiterating my request for their input.

I sent the questionnaire via email, including an explanation of the study, as well as information regarding the questionnaire. The questionnaire consisted of seven open- and closed-ended questions; also, there was room for the participants to offer additional suggestions related to (a) new items that should be listed, and (b) the phasing of the items. Survey Monkey was used to deliver the questionnaire. I analyzed the data collected and summarized the identified themes. I then used the identified themes to develop the Round 2 questionnaire.

Round 2 Questionnaire

The Round 2 questionnaire asked the participants to focus on the accuracy of statements derived from Round 1 (McPherson et al., 2018). I sent the questionnaire via e-mail and again delivered it using Survey Monkey. The Round 2 questionnaire was comprised of two-dimensional aspects based on the themes from the Round 1 questionnaire to assess, individually and separately, on the themes. The first dimension asked the participants to give a score, from 1=lowest to 5=highest, to measure a consensus with respect to the importance of each component within the respondents' group. The second dimension asked the participants to look at the same components as in dimension one this time, considering which ones can be disregarded and which one are crucial if a CBE program is to be effective.

Data Analysis

The data analysis and interpretation are the process of systematically searching and arranging the collected data to interpret and develop ideas about findings (Bodgan & Biklen, 2007). In the analysis phase, the researcher takes the collected data and begins organizing and dissecting the data into manageable units using coding techniques—all while synthesizing to search for patterns (Bodgan & Biklen, 2007). The researcher can then begin the interpretation phase of the study, explaining and framing the ideas about theory to illustrate why the findings are important (Bodgan & Biklen, 2007). In each round of the questionnaires, I revised themes to develop a precise list of best practices and to eliminate redundancies. In each round, I analyzed the data for common themes, noting any similar and discrepant responses.

The Round 1 questionnaire comprised of open-ended questions. I analyzed and summarized the data categorizing word frequencies and keywords, allowing me to identify patterns to begin in the development a list of best practices. Also, I developed a coding system to cross-check the data. I developed the Round 2 questionnaire from the data collected in Round 1 after I identified common themes. In Round 2, I asked the participants to assess, individually and separately, on the specific themes identified from the Round 1 data analysis. I used the Round 2 questionnaire to measure a consensus on the important/relevant aspects of the components.

The data analysis and collection were continuous and simultaneous throughout the Delphi method. Using a qualitative content analysis approach allowed me to present the data in words or themes to draw possible interpretations from the results (Bengtsson,

2016). Also, a qualitative content analysis approach allows for a subjective interpretation of the content through a systematic process of coding and identifying themes (Hsieh & Shannon, 2005).

Results

Table 2 represents the percentage of expert panel participation for each round, seven of the eight-panel of experts completed the Round 1 questionnaire, 87.5%, and all eight of the panel of experts fully completed the Round 2 questionnaire.

Table 2

Percentage of Expert Panel Participation for Each Round

Delphi round	Experts enlisted	Completed questionnaire	Response rate
1	8	7	87.5%
2	8	8	100%

Note. The number of participants who completed each round of the questionnaire.

I analyzed the two rounds of data based on the research questions to develop a list of best practices in professional development, support, and training resources needed for faculty teaching in a CBE method. Included in this section are the descriptive analysis of the expert panel's responses.

Delphi Round 1. Brief overview and description. The Round 1 questionnaire (see Appendix I) was comprised of three themes related directly to the three research questions and professional literature: professional development elements, support resources, and training resource areas for professional development.

The Round 1 questionnaire served as the cornerstone in soliciting opinions from the panel of experts on the professional development, support, and training resources

needed for CBE. The Round 1 questionnaire was comprised of five open-ended questions and two pre-set questions with determined rankings based on the literature research.

In the Round 1 questionnaire, the panel of experts shared their opinions regarding the crucial elements needed in developing and delivering CBE faculty professional development and the types of CBE related professional development they received. Also, the panel of experts shared their expertise around the essential elements they felt were significant in supporting CBE. Finally, I asked the panel of experts to identify training resources they believed would benefit other faculty teaching in a CBE method.

In each theme, the panel of experts provided a list of best practices for the professional development, support, and training resources needed for faculty teaching in a CBE method. The questionnaire closed with seven of eight-panel experts completing Round 1. I downloaded the results from Survey Monkey and analyzed for themes to develop the questionnaire for Delphi Round 2.

Delphi Round 1 data analysis and results. Using Braun and Clarke's (2006) six-phase thematic analysis, as seen below in Table 3, I performed a thematic analysis on the Round 1 data set. Using thematic analysis process allowed me to identify, analyze, and report themes from within the data set to interpret the various aspects of the research topic (Braun & Clarke, 2006).

Table 3

Six-Phases of Thematic Analysis

Phase	Description of the process
Step 1: Becoming familiar with the data,	Step 4: Reviewing themes,
Step 2: Generating initial codes,	Step 5: Defining and naming themes,
Step 3: Searching for themes,	Step 6: Producing the report.

Note. Adapted from "Using Thematic Analysis in Psychology" by V. Braun, and V. Clarke, 2006, *Qualitative Research in Psychology*, *3*(2), p. 87

In phase one of Braun and Clarke's (2006) six-phase process, the researcher becomes familiar with the data set and begins to identify ideas to develop themes. I began the phase one process by combining the data set into one document and started highlighting and circling common phrases and repetitious words, noting references from the literature review and research questions. For example, question one on the questionnaire asked the panel of experts to describe the professional development, support, and training resources they received to teach in a CBE method. Six out of the seven panel of experts indicated in their responses that they did not receive any professional development, support, or training resources, which aligns with the findings of the literature review and supported the research questions. For example, Lurie and Garrett (2017) indicated there is a gap in the training and support faculty receive in the implementation of a CBE method. The results of Lurie and Garrett (2017) survey showed that less than a quarter of their respondents provided training and support for faculty in the implementation of a CBE method. Responses from the experts illustrated the importance of professional development, support, and training resources.

Proceeding to phase two of Braun and Clarke's (2006) six-phase process (generating initial codes), I took the initial ideas identified in phase one and began to generate a list of possible codes. As I discovered interesting data related to the research topics, I used color-coding of specific words to group similar items together to develop the initial coding. For example, the phrase "They need to understand the key principles of

CBE" coded as "key principles of CBE." Additionally, the phrase "At some level, they should be able to do and teach/role model/mentor a learner in the skills and knowledge expected of a learner in a competency-based program" coded as "faculty role mentor."

To complete phase three, I transferred the data set into Excel and began color-coding identified initial codes for further analysis (see Appendix J). Collating the relevant data extracts within the identified initial codes, I was able to further analyze the codes and consider how to combine codes to form initial themes.

Identification of multiple themes emerged from phase three. Using the emerged themes identified from phase three, I further refined the themes in phase four. Table 4 depicts the initial coding that developed from the phrases, repetitious words, coding, and my analysis of the data through phases one and two.

Table 4

Initial Coding from Round 1 Questionnaire

Open-ended questionnaire questions	Initial coding
Describe the professional development, support, and training resources you were given to teach in a competency-based education method (e.g., types of training, length of training received).	No formal training, no support given
What skills and knowledge are essential for a faculty member to possess before they teach in a competency-based education method?	Competencies, roles of faculty (mentor), content expert, subject matter expert, curriculum design, assessment, theory of CBE, curriculum is same but different
If you were creating a professional development course to instruct new faculty how to teach CBE courses, what elements would be critical to include?	Assessment principles, data to make competency decisions, curriculum design, theory of CBE, backward mapping, difference between evaluation and assessment, communication, mentoring, intended outcomes, educational principles, best practices of pedagogy, feedback, subject matter expert, adult learning theory
What types of ongoing CBE professional development would be relevant to help provide training to faculty?	Assessment standards, assessment methods, and targets, CBE philosophy, faculty buy-in, differs from traditional higher education, adult population, resources, mentoring, assessment techniques, level of comfort with competencies, subject matter expert, switch from teaching focus to learning focus, switch in mindset, new evidence-based practices
In what formats do you prefer professional development to be delivered (face-to-face, online, blended, synchronous, and asynchronous)?	Blended, face-to-face, online
Please place a checkmark next to the items you feel are essential organizational support areas you feel should be included to support faculty teaching in the CBE method.	Library, administrative, mentoring, instructional design, media services, peer support, subject matter expert, assessment design and implementation

Open-ended questionnaire questions	Initial coding
List the training resources you believe you need, or that would benefit other faculty who will be teaching in a CBE method (e.g., handbook, informal training, and conferences).	Learning community, examples of CBE, handbook, annual retreats, successful teaching, peer groups, training shadowing, relevant theory, student handbook, mentor handbook

Note. The information in this table contains the initial coding from round 1 developed from the phrases, repetitious words, coding, and my analysis of the data through phases one and two.

Phase four involves two levels of reviewing and refining the identified themes

(Braun & Clarke, 2006). The first level of review involved reviewing the data extracts

identified at the initial coding. This process involved reading the collated extracts for

each identified theme and considering if they formed a coherent pattern. Table 5 displays

the most frequent themes, 41 in total, identified from the Round 1 data set.

Table 5

Major Themes Identified From Coding

Open-ended questionnaire questions	Most frequent themes
Describe the professional development, support, and training resources you were given to teach in a competency-based education method (e.g., types of training, length of training received).	1. No formal training
What skills and knowledge are essential for a faculty member to possess before they teach in a competency-based education method?	1. Understand key principles of CBE 2. A clear and consensual statement of the target competencies 3. Subject matter expertise 4. Understanding of student assessment 5. Faculty role of a mentor and assessor 6. Frameshift in the approach to education that changes curriculum design
If you were creating a professional development course to instruct new faculty how to teach CBE courses, what elements would be critical to include?	1. Defining competency frameworks and evidence necessary to judge competence 2. Assessment principles of CBE 3. Curriculum design 4. Theory of CBE and how it differs from traditional higher education models 5. Backward mapping 6. Difference between evaluation and assessment 7. Adult learning theory 8. Best practices in pedagogy, feedback, and evaluation/assessment
What types of ongoing CBE professional development would be relevant to help provide training to faculty?	1. Standards by which competencies are judged 2. Various assessment methods and targets 3. CBE philosophy 4. Teaching and learning in adult populations 5. Institutional resources 6. Mentoring techniques 7. Assessment skills and techniques 8. Switch from teaching focus to a learning focus 9. New evidence-based practices

Open-ended questionnaire questions	Most frequent themes
In what formats do you prefer professional development to be delivered (face-to-face, online, blended, synchronous, and asynchronous)?	1. Blended 2. Face-to-face 3. Online
Please place a checkmark next to the items you feel are essential organizational support areas you feel should be included to support faculty teaching in the CBE method.	1. Library 2. Administrative 3. Mentoring 4. Instructional Design 5. Media Services 6. Peer Support 7. Assessment Design 8. Implementation
List the training resources you believe you need, or that would benefit other faculty who will be teaching in a CBE method (e.g., handbook, informal training, and conferences).	1. Faculty Handbook 2. Student Handbook 3. Assessment Process 4. Peer Support 5. Curriculum Review Process 6. Mentoring Handbook

Note. The information in this table contains major themes identified from most frequent themes, 41 in total, identified from the Round 1 data set.

Level two of the reviewing and refining phase is a similar process, except at this level, reviewing the entire data set is reviewed in consideration of the validity of the identified individual themes and how the themes relate to the data set (Braun & Clarke, 2006). This phase allowed me to ascertain that the identified themes aligned with the data set and to identify any additional themes I may have missed. No additional themes were identified.

Phase five of the six-phase process is the final refinement of the themes. Using a thematic map, I was able to illustrate the relationships between themes and ensure relation to the main theme (see Figure 2). Using the most frequent themes, identified in the Round 1 analysis and the thematic map, I developed the Round 2 questionnaire.
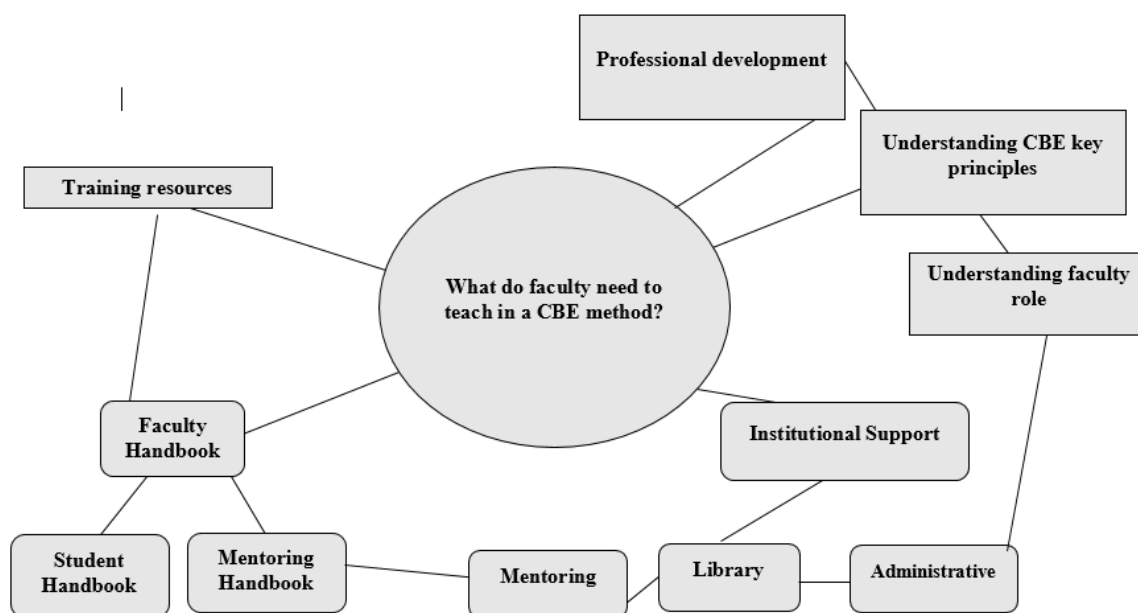
Figure 2. Thematic map of themes relationships.

Delphi Round 2. Brief overview and description. Round 2 questionnaire was

structured as a two-dimensional assessment (see Appendix K). Dimensional assessment

one was comprised of seven matrix questions and asked participants to rank the

components, elements, and traits in order of importance from 1=lowest to 5=highest. In

the dimensional assessment two, I asked the participants to look at the same components,

elements, and traits located in the previous assessment and consider which ones can be

disregarded and which ones are crucial if a CBE program is to be effective. I then asked

participants to place a mark selecting either crucial or not crucial. The questionnaire had

one final question asking participants to share any additional thoughts/comments on

CBE. The questionnaire for Delphi Round 2 consisted of 14 matrix questions and one

open-ended question that asked participants to share any additional thoughts on CBE.

Delphi Round 2 data analysis and results. Round 2 questionnaire was an iterative of Round 1 data analysis. Seven main aspects were identified in the Round 1 inquiry of the expert's opinions. In the Round 2 questionnaire, the panel of experts evaluated the seven main topics using two important dimensions. All eight-panel of experts completed the Round 2 questionnaire.

Dimensional assessment one results. Dimensional one assessment asked the panel of experts to rank in order of importance using the rubric 1=lowest to 5=highest. From the dimensional one assessment, the panel of experts decided the following as important factors for professional development, support, and training resources in a CBE method.

Question 1 asked the panel to rank in order of importance the six essential skills and knowledge needed for a faculty member to possess before they teach in a CBE method, Figure 3. The panel of experts ranked "understand key principles of CBE" as the most important knowledge needed aligning with the literature. Fundamental principles of CBE can include items such as institution development of curricula, the design, and delivery of instruction, and how students be assessed on their skills and knowledge (Lurie & Garrett, 2017). There is a specific diversity and complexity in the implementation of a CBE program, which requires customized implementation in addition to understanding the fundamental principles associated with the implementation.
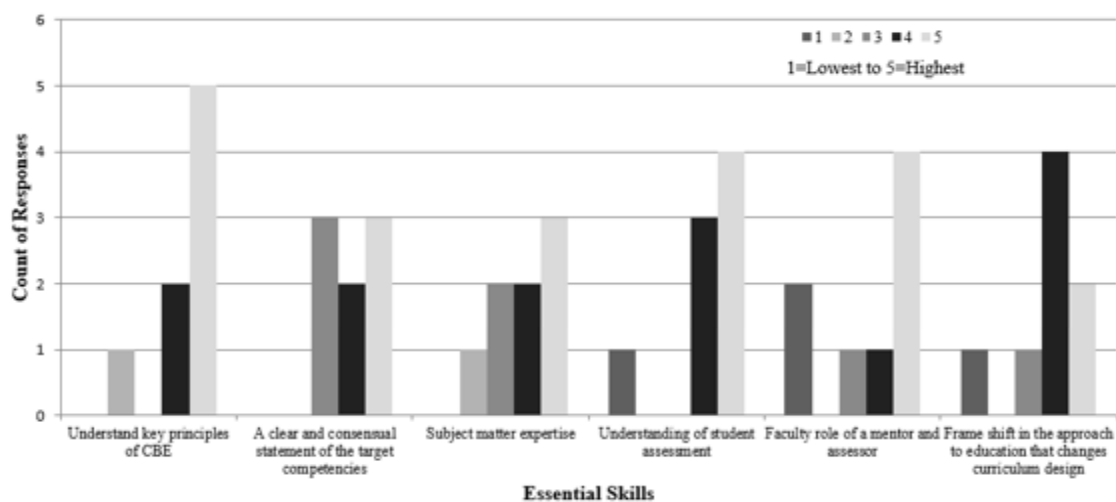
Figure 3. List of essential skills and knowledge for teaching in a CBE method.

Question 2 asked the panel to rank in order of importance the components or traits needed if they were to consider the situation in which they were creating a professional development course. The panel considered "defining competency frameworks and evidence necessary to judge competency" as most important (see Figure 4). McIntyre-Hite (2016) shares defining how competencies are developed and measured are two of the inconsistent variables associated with the implementation of a CBE program. Faculty roles have changed in the CBE model to that of assessor, mentor and coach, instructional facilitator, community partner, and content and subject matter expert (Newbold et al., 2017).
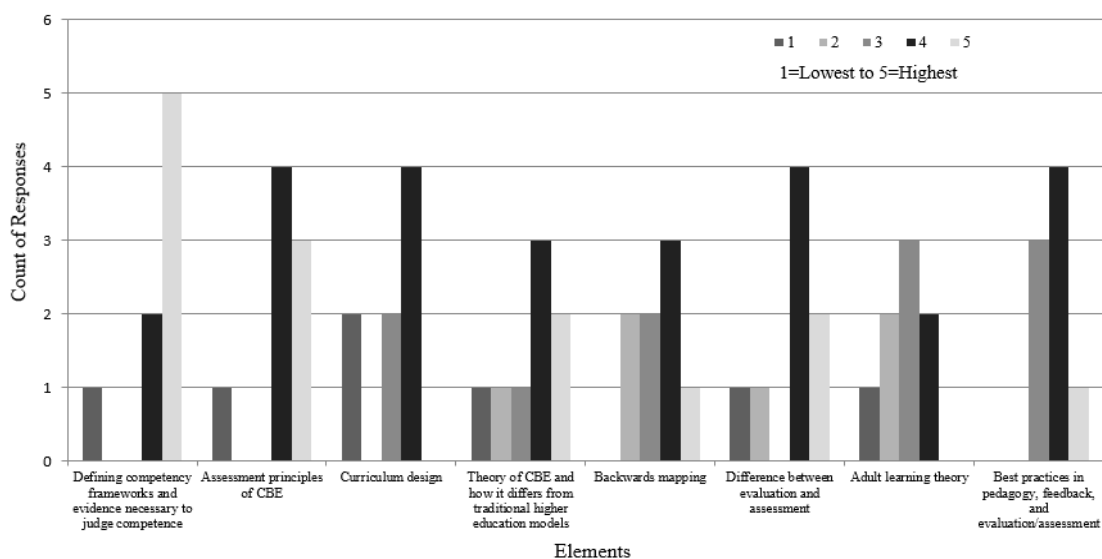
Figure 4. Elements needed to create a professional development course for new CBE faculty.

Question 3 asked the panel to rank in order of importance the types of ongoing competency-based education professional development that are relevant for providing training to faculty. The panel considered two areas as relevant for ongoing CBE professional development "standards by which competencies are judged" and "assessment skills and techniques" (see Figure 5). Having meaningful and measurable assessments are critical in a CBE method, particularly indirect assessment program where students are largely or entirely assessed through the assessment, which is unlike the traditional classroom where students are assessed by participation or attendance (Bral & Cunningham, 2016). In a CBE method, an assessment must provide valid and reliable evidence that the students have mastered a set of competencies (Bral & Cunningham, 2016).
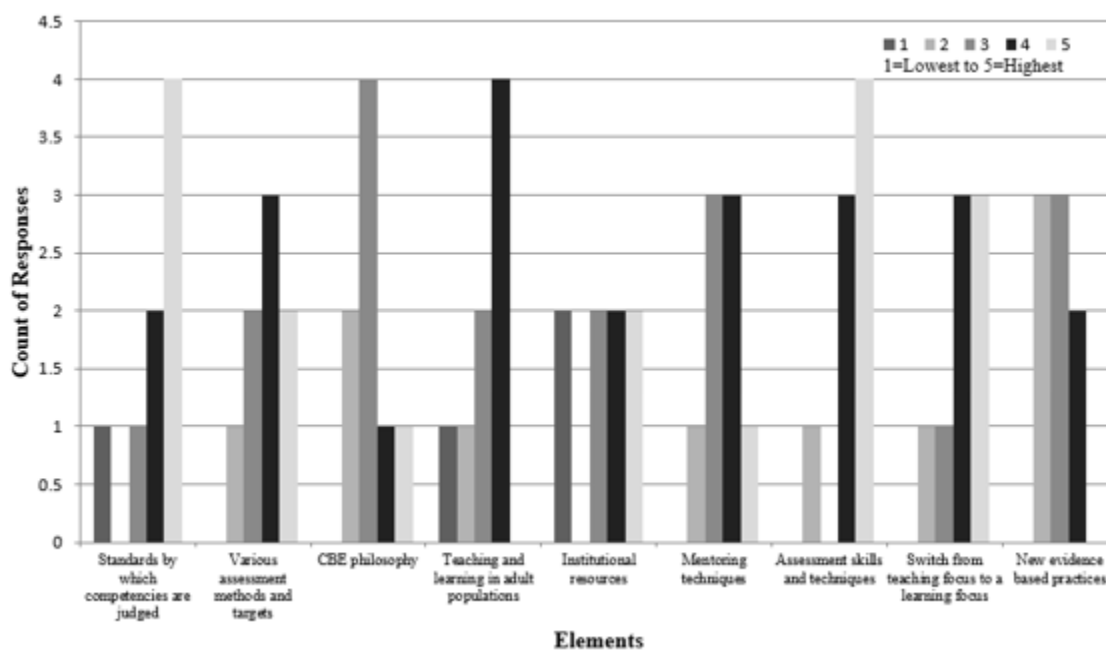
Figure 5. Elements needed for an ongoing CBE professional development.

Question 4 asked the panel of experts to consider the following possible formats to provide professional development training's/instruction. The panel of experts had three options for this question blended, online, and face-to-face. The panel ranked in order of importance blended, face-to-face, and online (see Figure 6).
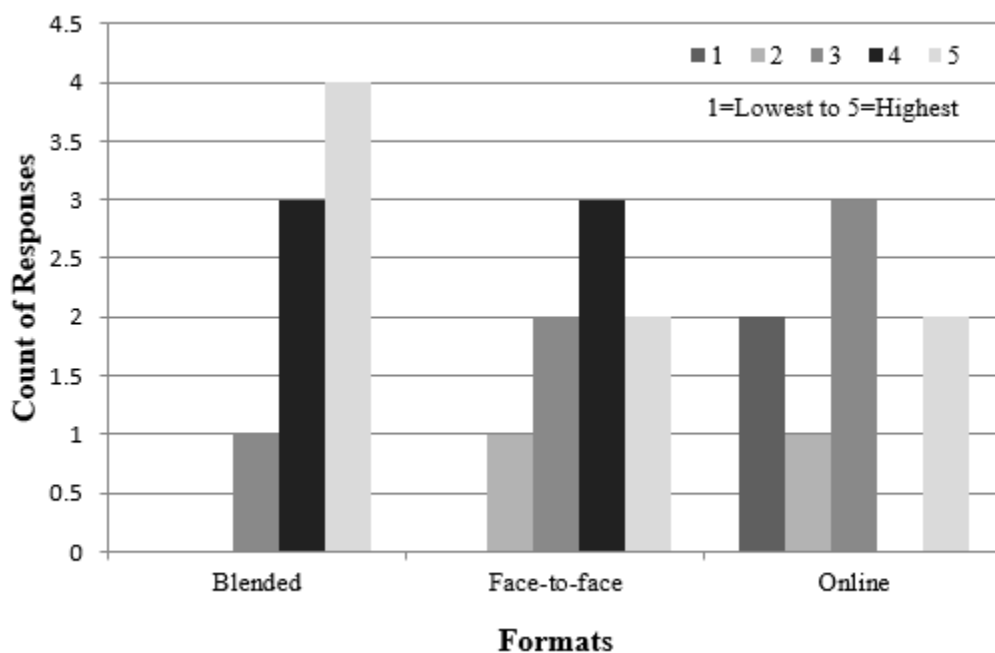
Figure 6. Different possible formats to provide professional development trainings/instruction.

Question 5 asked the panel of experts to rank in order of importance the organizational support areas that could be included to support faculty teaching in the CBE method. The participants indicated "mentoring" and "assessment design" as essential (see Figure 7). Faculty in a CBE method take on different roles than in the traditional classroom roles such as assessment faculty, instructional faculty, mentors and coaches, content and subject matter expert, and community partnership faculty (Newbold et al., 2017). The mentoring and coach role faculty in a CBE method provide tasks on topics such as project and time management, working in teams, collaboration, and overcoming personal challenges (Newbold et al., 2017).
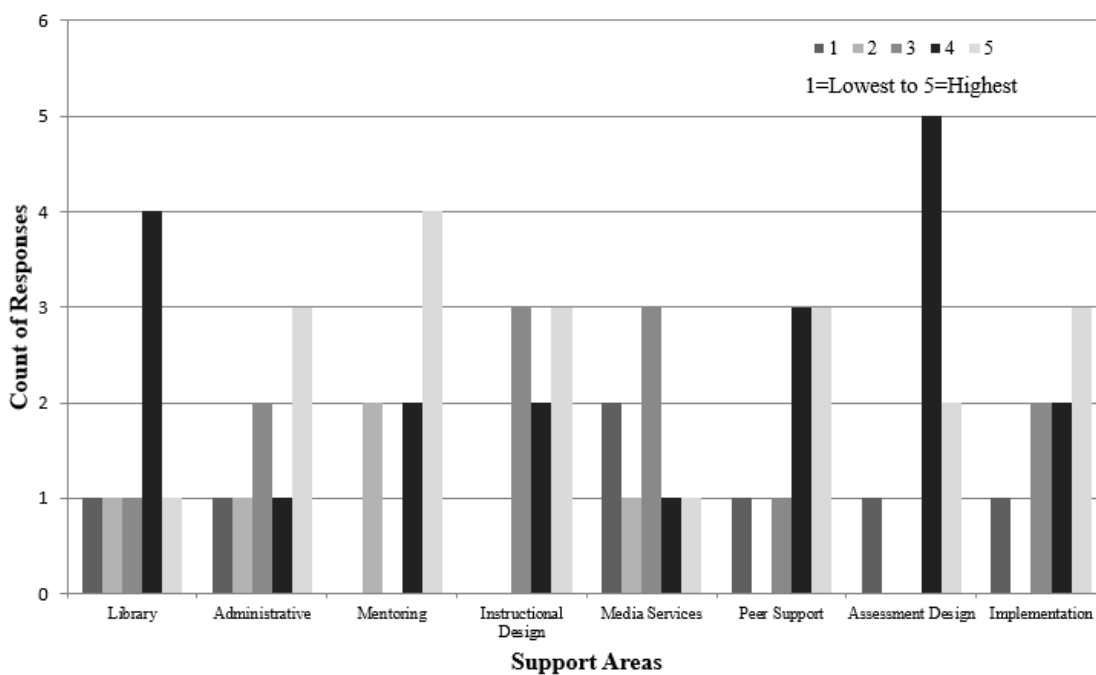
Figure 7. The relevant organizational support for faculty teaching in the CBE method.

For question 6, the panel of experts were asked to rank in order of their importance the following list of training resources they believed they would need, or that would benefit other faculty who will be teaching in a competency-based education method (e.g., handbook, informal training, and conferences). The panel of experts selected "assessment process" and "faculty handbook" as important (see Figure 8). The assessment faculty role in a CBE method requires the faculty to focus objectively on assessing the student on whether they have mastered the competency (Newbold et al., 2017). Defa et al. (2016) shared the need for a training course and handbook to ensure a standard of quality and consistency. The resource will serve as a compilation of guidelines for course design and implementation.
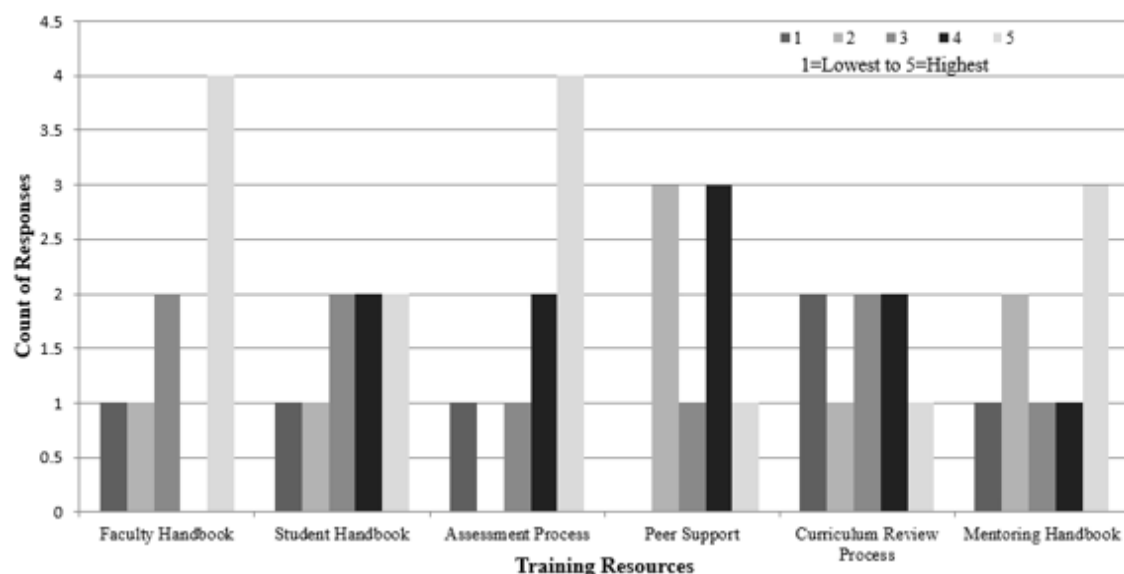
Figure 8. Training resources for teaching in a CBE method.

Dimensional assessment two results. Dimensional two assessment asked the

panel of experts to consider which of the components can be disregarded and which ones

are crucial to be present if a CBE program is to be effective. From the dimensional two

assessment, the panel of experts decided the following as important factors for

professional development, support, and training resources in a CBE method.

Question 7 asked the participants to decide which elements were crucial for a

CBE program to be effective about the skills and knowledge/expertise of faculty. There

were six elements: (a) understanding key principles of CBE, (b) a clear and consensual

statement of the target competencies, (c) subject matter expertise, (d) understanding of

student assessment, (e) faculty role of a mentor and assessor, and (f) frameshift in the

approach to education that changes curriculum design. The panel selected the "clear and

consensual statement of the target competencies" and "understanding of student

assessment" as both of crucial (see Figure 9). Bral and Cunningham (2016) stated one of

the challenges to a CBE method is there is no universal definition of a competency.

Competencies are not just taking learning objectives that are focused on the course

content; competencies must also address performance or application of the learning (Bral

& Cunningham, 2016; Gyll & Ragland, 2018). Developing meaningful and measurable

student assessments is another critical element of a CBE method. The assessments in a

CBE method must provide valid and reliable evidence that the student has mastered the

specific set of competencies (Bral & Cunningham, 2016; Gyll & Ragland, 2018). Bral

and Cunningham (2016) further stated students should be measured by their ability to

engage in job-related activities or to apply their knowledge and skills to their respective

fields.
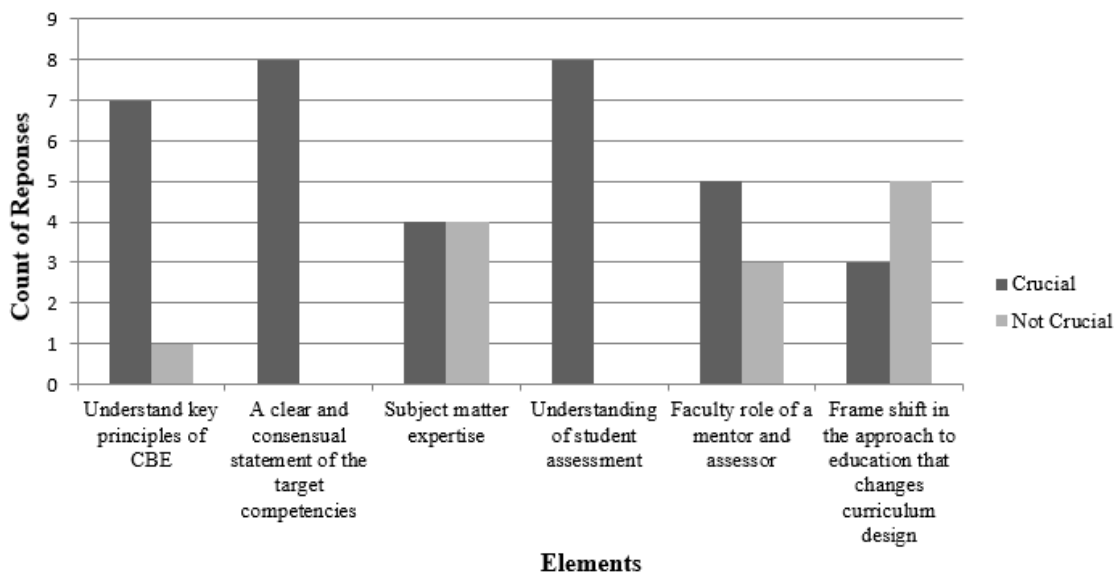
Figure 9. The skills and knowledge/expertise faculty needs in CBE method.

Question 8 asked the participants to decide which elements were crucial for a

CBE program to be effective about the relevant CBE course components. There were

eight elements related to the course components: defining competency frameworks and evidence necessary to judge competence, assessment principles of CBE, curriculum design, theory of CBE and how it differs from traditional higher education models, backwards mapping, difference between evaluation and assessment, adult learning theory, and best practices in pedagogy, feedback, and evaluation/assessment. Defining "competency frameworks and evidence necessary to judge competence" and "assessment principles of CBE" were both crucial for a CBE program to be effective (see Figure 10).

By focusing on observable and measurable criteria of performance assessments will allow the evaluators to reliably and consistently evaluate students (Bral & Cunningham, 2016; Gyll & Ragland, 2018). Bral and Cunningham (2016) further stated that the use of analytic rubrics should be used to measure competency performance.
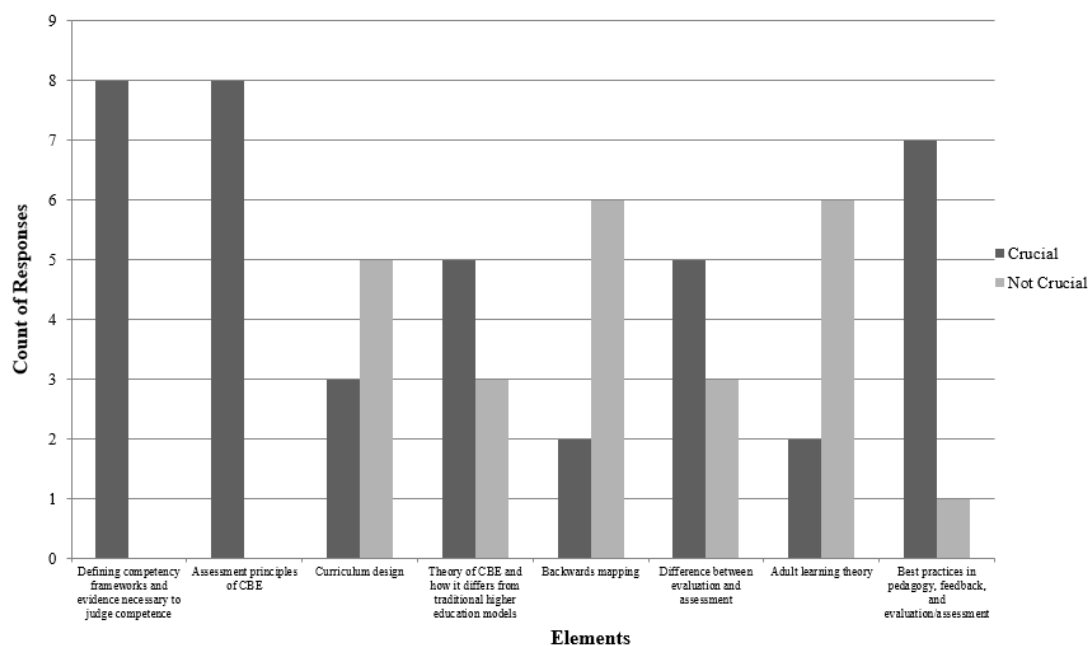
Figure 10. Relevant CBE course components needed for CBE professional development.

Question 9 asked the participants to decide which elements were crucial for a CBE program to be effective about the relevant ongoing professional development of

faculty. There were nine elements related to the ongoing professional development: (a) standards by which competencies are judged, (b) various assessment methods and targets, (c) CBE philosophy, (d) teaching and learning in adult populations, (e) institutional resources, (f) mentoring techniques, (g) assessment skills and techniques, (h) switch from teaching focus to a learning focus, and (i) new evidence-based practices. The participants selected standards by which competencies are judged and assessment skills and techniques as being crucial as inclusion into online professional development (see Figure 11).

The understanding of competencies and how to assess students are two crucial elements in teaching in a CBE method especially if your role is that of the assessor. Many faculty roles in a CBE method are a change from the current didactic method of teacher-centric to learner-centric model of CBE. With the change in faculty roles having professional development, support, and training will be crucial to teach the faculty the skills needed to assess students in a quantifiable method. Gyll and Ragland (2018) identified a twelve-step design process calling the process "best-test design principles" noting two primary types of assessments objective and performance (p. 4).
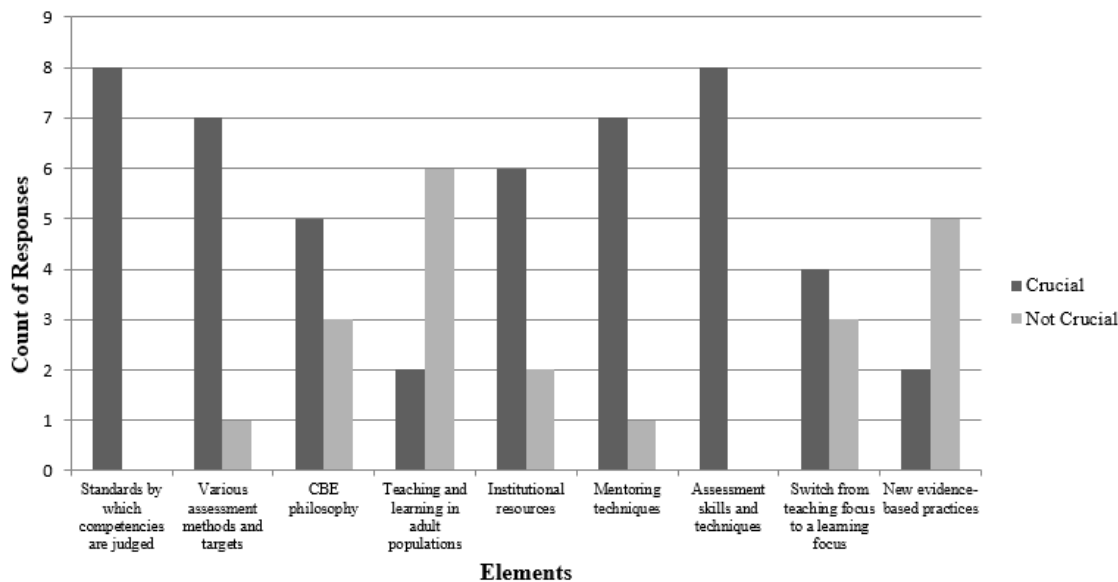
Figure 11. Required ongoing professional development elements.

Question 10 asked the participants to decide which elements were crucial for a CBE program to be effective about the relevant format of the professional development program. There were three elements related to the format of the professional development: (a) blended, (b) online, and (c) face-to-face. The participants were split on the delivery format between blended and face-to-face (see Figure 12).
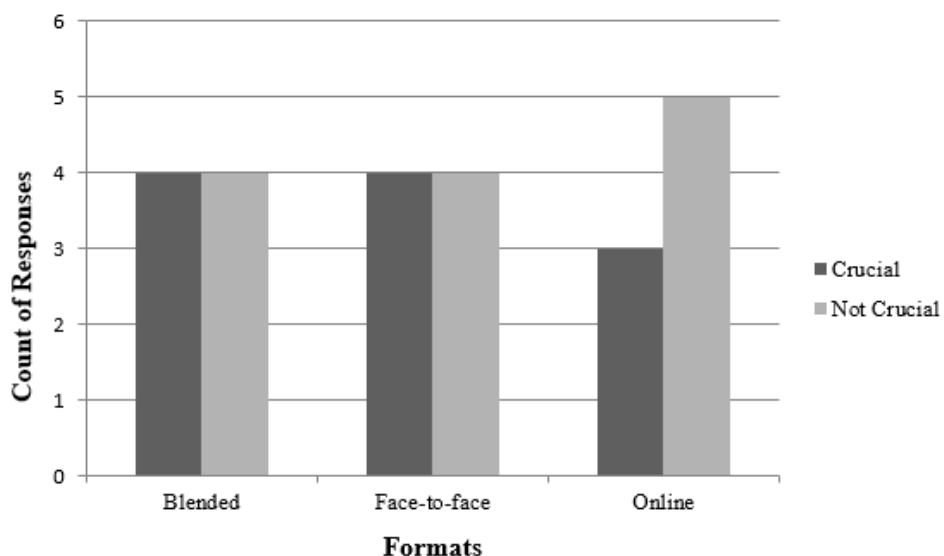
Figure 12. Professional development program's format.

Question 11 asked the participants to decide which elements were crucial for a CBE program to be effective about the relevant organizational support for faculty. There were eight elements related to the organizational support for faculty: (a) library, (b) administrative, (c) mentoring, (d) instructional design, (e) media services, (f) peer support, (g) assessment design, and (h) implementation. All eight participants selected assessment design as the most crucial element as organizational support needed for faculty (see Figure 13).
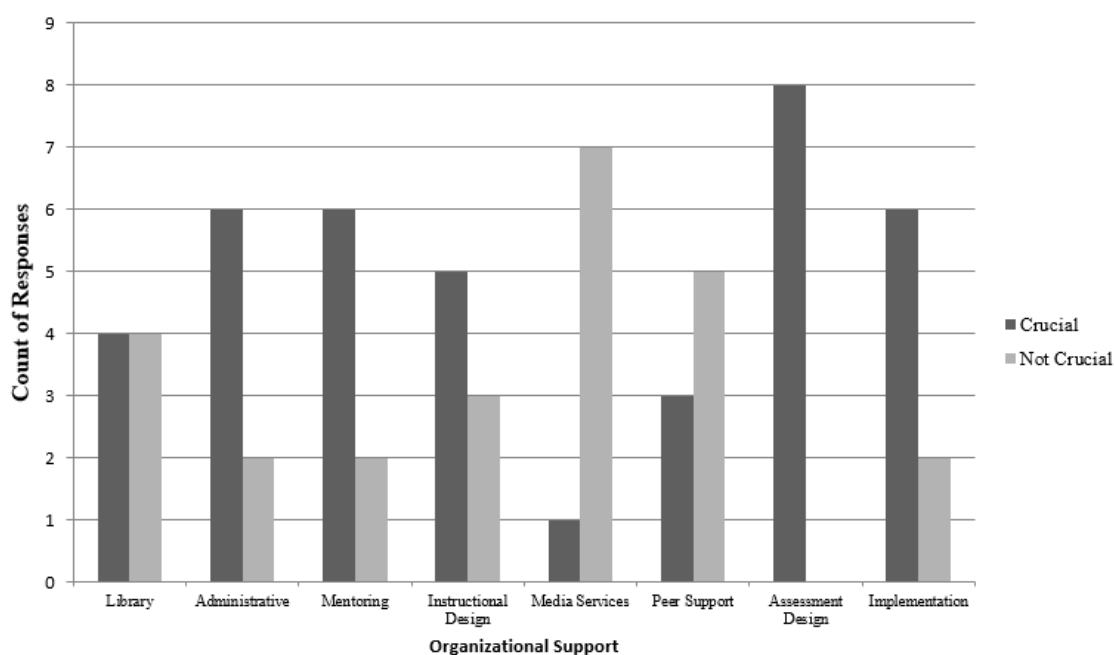
Figure 13. The organizational support for faculty.

Question 12 asked the participants to decide which elements were crucial for a CBE program to be effective about the relevant teaching and instructional resources for faculty. There were six elements related to the organizational support for faculty: (a) faculty handbook, (b) student handbook, (c) assessment process, (d) peer support, (e) curriculum review process, and (f) mentoring handbook. All eight participants selected

assessment process as the most crucial element as organizational support needed for faculty (see Figure 14).
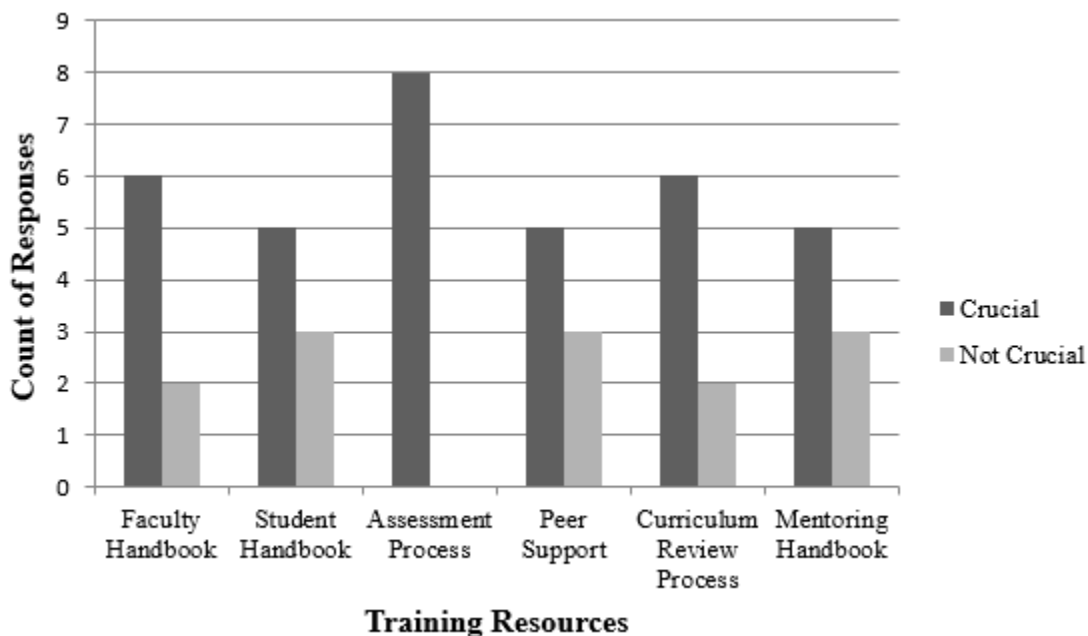
Figure 14. Required teaching and instructional resources for faculty.

Question 13 asked the participants to decide which elements were crucial for a CBE program to be effective about the design and implementation of a CBE program so that the program can be considered effective. There were seven elements related to the design and implementation so that the program can be considered effective: (a) previous instruction/training of faculty, (b) skills and knowledge/expertise of faculty, (c) relevant CBE course components, (d) ongoing professional development of faculty, (e) format of the professional development program, (f) organizational support for faculty and course, and (g) teaching and instructional resources for faculty. Participants were split between organizational support for faculty and course, and teaching and instructional resources for faculty as crucial elements (see Figure 15).
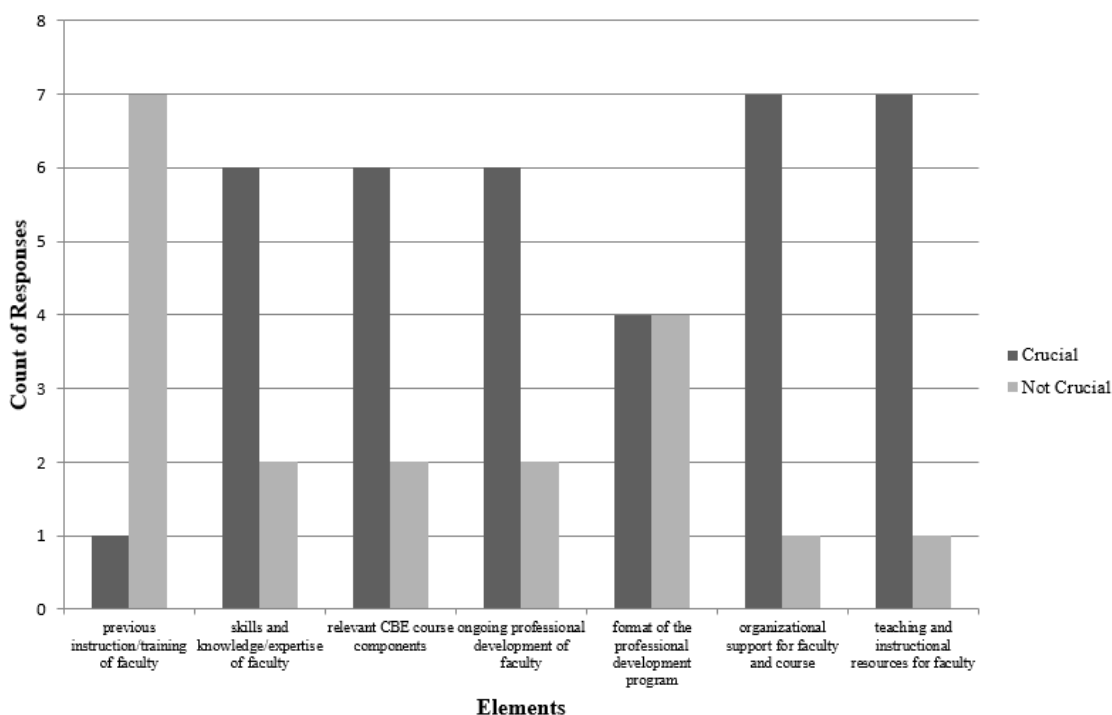
Figure 15. Essential elements in the design and implementation of a CBE program.

Summary of Findings

The purpose of this study was to gather expert opinions about what experts identify as significant in professional development, support, and training resources for faculty teaching in a CBE method. The results generated a list of effective best practices to be used in the development of professional development, support, and training resources for faculty teaching in a CBE method. The themes that emerged aligned with the three research questions and the conceptual framework of Knowles et al. (2005) adult learning theory. The CBE method has a heavy focus on the adult learner, which supports concepts of adult learning theory as explained by Knowles et al. (2005). In the next section, I summarize how the results and list of effective best practices relate to my research questions.

Research question 1. What do experts identify as significant in faculty professional development for CBE teaching faculty? There were two rounds of questionnaires deployed to the panel of experts. Using Braun and Clarke's (2006) six-phase thematic analysis for the round 1 data analysis, 23 themes emerged concerning RQ1, Table 6. The identified themes from round 1 were then presented in the round 2 questionnaire for the panel of experts to rank the components, elements, and traits in order of importance from 1=lowest to 5=highest. Also, I asked the panel of experts to consider which of the identified component, element, and trait can be disregarded and which ones are crucial to the professional development for faculty teaching in a CBE method.

Table 6

Major Themes Related to RQ1 Round 1 Questionnaire

Questions related to RQ1	Most frequent themes
What skills and knowledge are essential for a faculty member to possess before they teach in a competency-based education method?	1. Understand key principles of CBE 2. A clear and consensual statement of the target competencies 3. Subject matter expertise 4. Understanding of student assessment 5. Faculty role of a mentor and assessor 6. Frameshift in the approach to education that changes curriculum design
If you were creating a professional development course to instruct new faculty how to teach CBE courses, what elements would be critical to include?	1. Defining competency frameworks and evidence necessary to judge competence 2. Assessment principles of CBE 3. Curriculum design 4. Theory of CBE and how it differs from traditional higher education models 5. Backward mapping 6. Difference between evaluation and assessment 7. Adult learning theory 8. Best practices in pedagogy, feedback, and evaluation/assessment
What types of ongoing CBE professional development would be relevant to help provide training to faculty?	1. Standards by which competencies are judged 2. Various assessment methods and targets 3. CBE philosophy 4. Teaching and learning in adult populations 5. Institutional resources 6. Mentoring techniques 7. Assessment skills and techniques 8. Switch from teaching focus to a learning focus 9. New evidence-based practices

Note. The information in this table contains major themes as they relate to RQ1.

The round 2 questionnaire was broken down into two dimensions. Dimension

one, questions 1-4, supported RQ1 by asking the participants to rank the components,

elements, and traits related to professional development in order of their importance,

from 1=lowest to 5=highest. Five themes emerged from the panel of experts: (a) understand key principles of CBE, (b) defining competency frameworks and evidence necessary to judge competence, (c) standards by which competencies are judged, (d) assessment skills and techniques, and (e) blended format. Each of the themes align with the literature such as having standards by which faculty judge competencies is crucial, mainly in a direct assessment program (Bral & Cunningham, 2016). Defining competency frameworks and evidence will help the assessment developer in ensuring the assessment is valid and reliable to ensure the student has mastered the competency (Bral & Cunningham, 2016).

Dimension 2, questions 7-10, also supported RQ1 by asking the participants to decide if a component can be disregarded and which one is crucial for the professional development for faculty teaching in a CBE method. The emerged themes were: (a) clear and consensual statement of the target competencies, (b) understanding of student assessment, (c) competency frameworks and evidence necessary to judge competence, (d) assessment principles of CBE, (e) standards by which competencies are judged, (f) assessment skills and techniques, and (g) blended and face-to-face format. Each theme brings an essential aspect to the professional development. Such as, many experts in the field of CBE stated one of the challenges to a CBE method is no universal definition of what a competency is let alone how to assess it (Bral & Cunningham, 2016; Gyll & Ragland, 2018). Because there are no universal definitions of what a competency is, it is essential to develop meaningful and measurable assessments are critical elements a faculty member must know how to do.

Research question 2. What do experts identify as significant in supporting CBE teaching faculty? Round 1 questionnaire, question 6, relates to RQ2 by asking the participants to place a checkmark next to the items they felt were essential organizational support areas to include to support faculty teaching in a CBE method. The seven essential areas identified were: (a) library, (b) administrative, (c) mentoring, (d) instructional design, (e) media services, (f) peer support, and (g) assessment design and implementation. The essential areas were then used for the round 2 questionnaire.

Dimension one question 5 asked the panel of experts to rank in order of importance, with 5 being the highest level the seven essential areas identified in the round one data. The two themes that emerged were mentoring and assessment design. In a CBE method the research literature showed mentoring and assessment design are two key areas where faculty will need additional organizational support simply because it changed traditional faculty roles (Newbold et al., 2017). As Newbold et al. (2017) shared, faculty in a CBE method could have multiple roles such as: (a) assessor, (b) mentor, (c) coach, (d) instructional facilitator, (e) community partner, and (f) content subject matter experts.

Dimension two question 11 related to RQ2 by asking the panel of experts to decide what organizational support areas for faculty teaching in a CBE method are crucial to include. There were eight elements related to organizational support the theme that emerged as the most crucial element was assessment design. Assessments need to be valid, reliable, and authentic assessments (McIntyre-Hite, 2016). In addition to having valid, reliable, and authentic assessments, McIntyre-Hite (2016) noted that assessment rubrics must be clear, transparent, and well-aligned to the assessment.

Research question 3. What do experts identify as significant for training resources for CBE teaching faculty? Round 1 questionnaire question 7 related to RQ3 asking the panel of experts to list the training resources they felt would benefit faculty who will be teaching in a CBE method. The five themes that emerged were: (a) faculty handbook, (b) student handbook, (c) assessment process, (d) peer support, (e) curriculum review process, and (f) mentoring handbook. These five themes were used in the development of the round 2 questionnaire.

Dimension one question 6 asked the participants to rank the list of training resources they believe would benefit other faculty teaching in a CBE method. The themes, which emerged from question 6, were assessment process and faculty handbook. Defa et al. (2016) shared having a handbook to help in the understanding of the processes will go a long way in ensuring a standard of quality and consistency. As indicated in the research literature, faculty could have multiple roles in a CBE method. If a faculty handbook were created, which included defining the different roles faculty could have one could assume this could only benefit faculty (Newbold et al., 2017).

Dimension two question 12 asked the panel of experts to decide which of the six elements were crucial or not in regard to RQ3 as significant to training resources. Unanimously all eight participants selected assessment process as the most crucial training resource for faculty teaching in a CBE method. The research literature has shown that having a clear understanding of the assessment process is a crucial element to the success of a CBE method (McIntyre-Hite, 2016).

Project Deliverable Based on Findings

The project, a position paper (see Appendix A), will provide a glimpse of the research by summarizing the objectives of the research while providing sufficient details with valuable insight into what the full proposal might look like to stakeholders (Lyons & Luginsland, 2014). A goal of the position paper is to provide Northern Pike University with a more in-depth understanding of the issue and to recommend a solution to the professional development, support, and training resources needed for faculty in a CBE method.

Position papers are a strategically crafted paper designed to obtain support for an idea (Powell, 2012). Position papers originated in government settings but are now making a way into higher education as a pedagogical tool to articulate a position (Powell, 2012). Position papers are a powerful tool in persuading stakeholders and decision-makers in justifying an implementation to a solution (Stelzner, 2007). The position paper will provide the stakeholders with the necessary information to make an informed, evidence-based decision and increase their knowledge on the issue.

The position paper includes information on the professional development, support, and training resources needed based on the research findings. The data collected in this study provide a list of best practices to be used in creating a professional development initiative for faculty who will be teaching in a CBE method. Also, the position paper contains evidence for stakeholders for the development of a Community of Practice (CoP) online learning site as the avenue in providing the faculty professional development, support, and training resources based on the identified best practices.

The data collected has been stored in an Excel spreadsheet and word-processing software. All of the files associated with this study have been password protected. Also, all of the files have been saved on a password-protected personal laptop computer and backed up on a password-protected flash drive in a locked safe. I am the only person with access to the raw data, with the exception of the data shared with my committee. The responses of the participants and any communication have been kept anonymous throughout the study and have been stored on my personal computer in a password-protected file. Participants noted within the study have been given pseudonyms for personal protection. Data will be stored for five years following the completion of the study and then will be deleted.

Role of the Researcher

The role of the researcher in a Delphi method is different from the traditional researcher role in a qualitative method. In the Delphi method, a researcher is the planner and facilitator, as opposed to an instrument, as in a more traditional qualitative method (Avella, 2016). The risk of bias in a Delphi method is dramatically reduced because the primary role of the researcher is that of a planner, and most, if not all, of the communication is done electronically, creating an internal auditing process (Avella, 2016). In my initial contact with the participants, I shared a cover letter explaining that I am a doctoral student and the purpose of the study is a requirement for my program. I shared with the participants that this study will help me both personally and professionally grow and will help me in making a global change in higher education professional development.

I do not have any connection with School A, and the university location I work at is approximately 80 miles from the sample location. Also, I do not have any personal or professional relationships with the sample location or participants. Because I have not had any personal or professional relationships with the sample location or participants, data collection was not affected, and bias was not created.

Potential Bias

In my role, I work with faculty daily to provide professional development, support, and training resources. I know how important it is to the success of faculty and students to have well-prepared faculty. When I learned about the demand for CBE in higher education, I wanted to learn as much as I could about best practices for professional development, support, and training resources needed for faculty. I actively utilized reflexivity to address bias throughout the research process. To maintain the credibility of findings and to reduce bias, I utilized memo bracketing. One of the advantages to the Delphi method is that there is a certain amount of bias already removed from the methodology because the participants do not meet in a face-to-face setting, and the researcher does not have face-to-face contact during the data collection process.

Assurance of Accuracy and Credibility

Ensuring accuracy in findings and interpretations is at the heart of any proper research (Creswell, 2012). When a researcher is engaging in repetitious, continuous research and is extensively immersed in the data analysis, the trustworthiness of the researcher is upheld (Creswell, 2012). For each round of data collection, I analyzed the data while comparing responses from various sources to detect identifiable patterns.

Amankwaa (2016) states that a researcher conducting a qualitative study needs to ensure trustworthiness by establishing credibility, transferability, dependability, and confirmability.

Credibility activities have been established throughout this study through triangulation, peer debriefing, discrepant analysis, and member checking. There were two rounds of data collection, with round two building upon round one. The first round of data collection required validation from the participants by conducting member checking of the emerged themes via the Round 2 questionnaire. Member checking is another credibility activity used to establish validity in the research (Amankwaa, 2016). I then analyzed the data collected for emergent themes. Each round went through a data triangulation process, verifying the themes.

In addition to employing credibility activities, I also employed dependability activities, which is the process of having a researcher who is not involved in the study complete an inquiry audit (Amankwaa, 2016). I reached out to another qualitative researcher to conduct an audit of the data analysis to provide the credibility and validity, and to justify the emerged themes using triangulation. The qualitative researcher identified is a division chair of qualitative studies, is an associate professor of mathematics and science, and holds a doctorate. This qualitative researcher signed a confidentiality agreement, and I provided a copy of the results. Together we worked to verify the accuracy of the themes identified. Finally, I used the method of memo bracketing to mitigate any potential preconceptions, allowing me to reach a deeper level of reflecting on the analysis and results of the study.

Limitations

This study was designed to collect qualitative research from participants at a single northeastern university that offers a CBE program. Two-rounds of questionnaires based on the Delphi method were completed. Limitation expectations prior to beginning the study included a small sample size, time commitment, researcher bias, using a self-reporting instrument (questionnaire), and retention of participants.

Two main limitations emerged as the study was completed: small sample size and researcher bias. The most significant limitation was sample size. A minimum of 15 participants originally were estimated to complete the questionnaire. Ultimately, the CBE research site coordinator purposefully selected only eight participants to proceed with the study. Although a small sample was used, the panel of experts provided valuable insight on the topic of CBE and can reasonably be assumed to represent knowledge and skill of a more full group of educators with experience in CBE. However, because a single northeastern university was included in the, the findings may not describe the knowledge and skills of all higher education faculty and staff currently using the CBE method.

The other limitation that needed to be addressed during the study was researcher bias. Because I work closely with faculty to provide professional development, support, and training resources, elimination of researcher judgments, presumptions, and opinions was imperative. To do so, an outside qualitative expert reviewed both rounds of questionnaires prior to deployment to ensure that the questions were neutrally worded. The outside qualitative expert also evaluated the data collected to verify the accuracy of the identified themes.

In future research, additional steps could be taken to further mitigate limitations. For instance, the inclusion of more than one qualitative expert to review questionnaire design and data analysis could further support the omission of researcher bias. Expanding the scope of area for participants beyond a designated region of one state would introduce more participants to address the limitation of small sample size.

Summary

This study originated from a local Michigan University who is seeking to implement a CBE model to meet the needs of their adult learner population. Through its investigation, Northern Pike University realized there were many issues to overcome in the implementation process. One such issue was the change from the traditional teacher-centric model to a learner-centric model where the students are the drivers of the pace, structure, and content deliverables. The issue is significant locally and nationally due to the tremendous growth in the implementation of CBE in higher education (Anderson, 2018).

The purpose of this qualitative Delphi method was to gather expert opinions about CBE best practices in professional development, support, and training resources. The participants included a panel of eight CBE experts who participated in two rounds of data collection, which were analyzed and coded into themes. The data yielded a list of effective best practices framework for professional development, support, and training resources for faculty teaching in a CBE method. The data collection and analysis procedures included questionnaires, coding, methodological triangulation, member checking, and memo bracketing.

In the Round 1 data analysis, I used Braun and Clarke's (2006) six-phase thematic analysis and identified 41 themes as possible effective best practices concerning the three research questions regarding the professional development, support, and training resource for faculty. I used the 41 themes identified in the Round 1 data analysis to develop the Round 2 questionnaire. The Round 2 questionnaire asked participants to assess individually and separately on the specific elements identified from the Round 1 findings. I used the responses in Round 2 to measure a consensus concerning the importance of each element identified.

The data from Round 2 provided a list of best practices. The participants identified the following as crucial for a CBE program to be effective: defining competency frameworks and evidence necessary to judge competence, assessment principles of CBE, standards by which competencies are judged, assessment skills and techniques, blended format, assessment design, assessment process, organizational support for faculty and course, and teaching and instructional resources for faculty.

To build an understanding and a case for the reader, the use of the literature, the best practices identified from the participants, along with my interpretation of the data were used. This study's findings revealed a list of effective best practices that can be used in providing professional development, support, and training resources for a CBE method. Most notably was the need for a clear understanding of assessments, including how to design and assess.

In Section 3, I describe the project description, goals, and rationale for developing CoP online learning site to serve as the avenue for the professional development, support,

and training resources needed for faculty in a CBE method. The results from this study might serve as the starting point for the project- a position paper recommending the development of a CoP where faculty teaching in a CBE method can share best practices, develop relationships, and collectively construct knowledge toward a shared goal by interacting with other CBE experts.

Section 3: The Project

Introduction

In Section 3, I discuss the description of my project. Also, I provided the

description, goals, and rationale of my position paper. The purpose of my project is to

address the findings from my study and to provide a list of best practices to Northern Pike

University to use in its impending implementation of a CBE method. I review the

literature regarding the merits of position papers and professional development initiatives

for CBE faculty to support the genre and content of the project. Following the literature

review, I also provide a detailed description of the project's content and evaluation plan. I

conclude by discussing possible implications related to the project.

The motivation for my research study was to elicit the help of CBE experts in

identifying a list of best practices for the professional development, support, and training

resources to help Northern Pike University implement a CBE method. In my position

paper, I provided university administrators with a summary of my research study and a

possible solution to address the university's issue. A goal of the position paper is to assist

the university in gaining a more in-depth understanding of the issue and recommend a

well-investigated solution to guide the university toward a resolution (Willerton, 2012).

A position paper provides a glimpse of the research by concisely summarizing the

objectives of the research while providing sufficient details with valuable insight of what

a full proposal might look like to stakeholders (Lyons & Luginsland, 2014). Based on my

research findings and literature review, I recommended creating a new professional

development initiative—a community of practice (CoP) online learning site—to help

address the professional development, support, and training resources for faculty who

will be teaching in the CBE method. The online learning site will house a portal where

faculty can collaborate with other CBE faculty, mentor, and share instructional strategies

based on the best practices identified in my research and the literature review. Through

participation and sharing of artifacts, members of a CoP acquire and share knowledge,

which allows for a higher level of participation (Nistor et al., 2014b). A CoP is very

desirable for many academic activities such as the proposed professional development,

support, and training resources (Nistor et al., 2014a).

<div align="center">**Rationale**</div>

The goal of a position paper is to help key stakeholders justify implementing

decisions by quickly leading them down a path to a solution (Stelzner, 2007). This

position paper will provide the senior executive team with the following benefits:

- Increase the knowledge of the professional development, support, and training
  resources needed.

- Provide a list of best practices for professional development, support, and
  training resources.

- From the research study findings, serve as an avenue to support the university
  in creating a professional development initiative for faculty who will be
  teaching in a CBE method.

- Share the evidence for the development of a CoP online learning site to
  provide a one-stop online resource for faculty professional development,
  support, and training resources based on identified best practices.

- Provide stakeholders with why and how the research study findings will support the development of a CoP online learning site.

- Support the recommended solution by demonstrating the credible, reliable, and well-researched evidence.

The incentive for this project evolved from the list of best practices that emerged from the findings, the literature review, and my desire to share the best practices with the local site. The purpose of the research study was for CBE experts to identify a list of best practices for the faculty professional development, support, and training resources necessary for effective CBE.

In the position paper, I suggested the university senior executive team use the list of best practices for the creation of a CoP online learning site. The identified a list of best practices will lay the groundwork to assist the university in providing the professional development, support, and training resources for faculty who will teach in a CBE method.

Content of Problem

My study was grounded in the recently revisited phenomenon of CBE in higher education. To meet the needs of an increasing adult population, Northern Pike University has a desire to implement a CBE method. A CBE method is a change in the traditional teacher-centric model and therefore is a shift in the way faculty teach. To address this problem, I solicited CBE experts on their opinions on the professional development, support, and training resources needed to implement a CBE method. The goal of the study was to assist Northern Pike University in overcoming one of the hurdles of

implementing CBE by finding a solution on how to provide the resources needed for faculty who are changing teaching in the traditional model to a CBE model.

The findings from this study included a list of CBE best practices for faculty who will teach in a CBE method. The next phase in the process is to understand what to do with the list of best practices. With continued growth in the CBE field, and the need for higher education to meet the needs of adult learners, a well-researched solution is required to address the needs of faculty teaching in a CBE method. Based on my research findings and literature review, I recommended that Northern Pike University develop a CoP online learning site as a professional development, support, and training resources initiative for CBE faculty, using the list of best practices to guide the development. The site may offer faculty the opportunity to increase knowledge and skills in CBE, in addition to providing faculty an opportunity to mentor one another and engage CBE experts from outside the institution. The online CoP site may also bring societal benefits to both the university and other higher education institutions by creating a platform for a community of experts to share and collaborate.

Review of the Literature

This literature review conducted for the project included searches on the Walden University library site within the following databases and journals: ERIC, ProQuest, SAGE Research Complete, Academic Search Complete, *The Journal of Competency-Based Education, Journal of Continuing Higher Education, Journal of Education for Business, Education Next, International Journal of Instruction*, and Google Scholar. Search keywords included *professional development, faculty development, position*

papers, white papers, mentoring, community of practice, and *CoP.* In addition, the literature review was conducted to support why a position paper was selected as the best strategy to advocate for the creation of a CoP online learning site.

Project Genre Position Papers

A challenging task for researchers is advocating findings from a study and conveying that the recommended solutions will provide the optimal benefit to the recipients. To address these challenges, the researcher can select from a variety of reporting genres to advocate a position to stakeholders. For example, a report can be a presentation, a video, a two-way dialog, or an executive summary (McDavitt et al., 2016; Merriam & Tisdell, 2016). Whichever genre selected, the critical piece is ensuring the method takes a sound approach that addresses the problem, the strategy clearly articulates the justification, and applicability of the solution serves the needs of the intended audience (Powell, 2012; Stelzner, 2007).

A position paper was the genre selected as the best solution to communicate information to the local site. A position paper will provide the university with a clearly articulated response to the issue. Additionally, the paper can be disseminated to various strategic stakeholders.

A position paper formally informs strategic stakeholders of the essential factors to build a foundation to develop a resolution to an issue. In principle, the position paper serves as a method to present research and to sell an idea that will enact change. Position papers are widely used in government and business settings to shape opinions, obtain support, and to take a position (Powell, 2012; Willerton, 2012). A position paper should

provide the reader with justification as to why a problem needs to be solved, explore alternatives to solve the problem and lead the reader to a conclusion on how to solve the problem ("Eight Rules for Creating Great White Papers," 2005).

A well-written investigated position paper outlining a possible solution might assist university senior executive team in determining how to best address the issue. In other words, the position paper can lead the university toward the creation of a CoP online learning site to provide professional development, support, and training resources to serve the needs of new CBE faculty.

Interconnected Analysis

In my review of the literature, I found a need for professional development, support, and training resources for faculty teaching in a CBE method. A CBE method challenges faculty to learn a new approach in teaching; however, there has been little focus on the impending changes or the implications for faculty (Ashby et al., 2018; Gruppen et al., 2016). Although CBE now has a more significant role in higher education, there is a need to know how to best support faculty to ensure success in the implementation of a new format.

Conceptual Framework

Adult learning theory and a CBE method are positioned on the foundation of applying prior experience, knowledge, and motivation to learn. A CBE structure is a learner-centric model where the student is encouraged to participate and often facilitate class by sharing prior experiences and knowledge (McGrath, 2009). Lave and Wenger's (1991) theory of CoP and Knowles et al.'s (2005) adult learning theory provide greater

clarity for the rationale and applicability of establishing a professional development plan for the implementation of a CBE method at Northern Pike University. In addition to Knowles' et al., (2005) adult learning theory and Lave and Wenger's (1991) theory of CoP's, one would be remiss if you did not also include Vygotsky (1978) theory of social learning. A CoP is a social learning platform where experts and novices come together for a shared purpose. Through engagement and exploration of ideas in a social setting, such as a CoP, one can obtain new knowledge and ideas (Vygotsky, 1978). In other words, through a guided community of learners in a collaborative and colloquial process such as a CoP the development of new knowledge and skills occurs (Armellini & De Stefani, 2016; Booth & Kellogg, 2015).

Adult learning theory, also known as andragogy, is synonymous with a CBE method, both defined as a learner-centric method (Ford et al., 2017; Knowles et al., 2005). Faculty who will be teaching in a CBE method will need to move beyond content expertise and learn to become learner-centered instructors. Faculty professional development in a CBE method development should offer faculty insights into learner-centered content, and about the adult learner, provide opportunities for mentoring with other faculty, provide training resources, and provide support.

According to Vygotsky (1978), a shared dialogue between experts and novices, connecting in a supportive situation, can lead to a greater understanding where a more meaningful experience is constructed for all stakeholders through problem-solving activities and collaboration.

Lave and Wenger's (1991) concept of a CoP provides the opportunity for faculty to gain knowledge of learner-centered facilitation by interacting with other CBE experts, developing relationships, and collectively constructing knowledge toward a shared goal. A CoP is a group of people who engage in the process of collective learning in a shared platform (Wenger-Trayner. & Wenger-Trayner, 2015). Wenger-Trayner and Wenger-Trayner (2015) identified three crucial characteristics in a CoP: (a) a shared domain of interest, (b) building of relationships to enable learning from each other, and (c) sharing a repertoire of resources. The combination of all three of these characteristics constitutes a community of practice (Wenger-Trayner & Wenger-Trayner, 2015).

Project Content Professional Development

Faculty are at the heart of any higher education institution by sharing knowledge and expertise to students (O'Shea Lane, 2108). The current form of teaching, a teacher-centric method, transfers knowledge from the faculty member to the student by lecturing in the classroom (O'Shea Lane, 2018). However, a CBE method challenges faculty to shift from the teacher-centric method to a learner-centric method that is positioned on the adult learner, who has a certain amount of prior experience and knowledge (McGrath, 2009). In a learner-centric method, students gather and synthesize information, integrating with general skills of inquiry using prior knowledge to problem solve and think critically (O'Shea Lane, 2018).

The purpose of faculty professional development is to learn and apply new knowledge and skills that will improve faculty performance on the job. Faculty professional development has many associated terms, such as faculty development,

educational development, academic development, professional learning, mentorship, community of learning, teacher training, and, more recently, CoP (McKenna et al., 2016; Saroyan & Trigwell, 2015).

Higher education institutions that are implementing a CBE method need to know how to provide faculty with professional development, support, and training resources for CBE. Training resources include develop outcomes-based rubrics, gathering learning resources for the CBE paradigm, information for how to understand CBE standards, learn CBE curriculum expectations, develop competency statements or outcomes, and develop CBE curriculum (Bansal et al., 2017; Chacko, 2014; Cooper, 2016; Defa et al., 2016; Newbold et al., 2017).

A CoP online learning site may allow CBE faculty at Northern Pike University to create, with other CBE experts, an online professional development site to develop and share new learner-centered CBE instructional strategies, support resources, and training resources based on the best practices identified in the study. Also, the new online CoP could provide an opportunity for new CBE faculty to collaborate with other experts to problem-solve issues such as how current learning outcomes can be converted to competencies based on industry needs and developing high level formative and summative assessments (Chacko, 2014; Rossing & Lavitt, 2016). In a CoP, members participate not only directly through communication but also in-directly by creating artifacts (Nistor et al., 2014b). Through the direct and in-direct participation experts and novices share knowledge and many times the CoP member can be both expert and novice at the same time dependent on the activity (Nistor et al., 2014b). The CoP environment

then becomes a professional development platform for both the experts and the novice faculty.

Higher education institutions intending to implement a CBE method need to look at the best way to tailor their professional development on a topic that is not yet widespread in addition to deciding how to serve the needs of their faculty. Having single exclusive workshops is not an effective way of providing professional development, support, and training resources (McKenna et al., 2016; Meijs, Prinsen, & de Laat, 2016). There is a current shift in the way professional development is delivered from workshops, seminars, and courses to faculty building the professional learning (Meijs et al., 2016). Having a long-term collaboration in an online platform, such as a CoP, could allow faculty to build relationships and trust over a long period and while providing professional development, mentoring resources, and support (Meijs et al., 2016; Nistor et al., 2014b; van As, 2017).

A new configuration is needed in higher education that fosters a collaborative environment with other institutions (Ramaley, 2014). Kennedy (2016) stated that having different approaches to professional development fosters learning. Kennedy (2016) further stated professional development programs that were focused solely on content knowledge were less effective. As CBE methods continue to grow, higher education institutions need to develop a professional development strategy that allows faculty to form social networks (Golden, 2016).

A Community of Practice Approach

A CoP is grounded in the theory of groups of people coming together with a common interest and commitment to a domain of knowledge and who are focused on improving shared knowledge and practices (Tomkin, Beilstein, Morphew, & Herman, 2019; Wenger-Trayner, B. & Wenger-Trayner, E., 2015). The use of CoP's has many practical applications; for example, in the business sector, government agencies, professional associations, and higher education (Wenger-Trayner & Wenger-Trayner, 2015).

The use of CoP's in higher education is a relatively new concept where social learning could be used as an opportunity for faculty professional development (McKenna et al., 2016; Meijs et al., 2016; Wenger-Trayner, B. & Wenger-Trayner, E., 2015). Social learning can contribute to enhancing cognitive presence, which plays a central role in meaningful teaching (Armellini & De Stefani, 2016). In Nistor et al. (2014b) study on sense of community in academic communities, shared there are commonalities between sense of community and CoP such as sharing of knowledge corroborating the socio-cognitive structures that make up a CoP. Armellini and De Stefani (2016) also shared having a social presence, such as in an online CoP, is a significant lever for engagement and peer-support. Nistor et al. (2014b) shared in academic practice having a sense of community and interpersonal knowledge are two factors of community building and knowledge sharing motivation.

A CoP can take on the form of professional development, support, and training resources with development of activities to meet the needs of the group (van As, 2017).

CoP members can form relationships around their shared interests, where they have the

opportunity to share their knowledge and experiences (van As, 2017). However, in order

for a social learning-type professional development such as a CoP to be truly useful, it is

crucial for the participants to actively engage and participate. Members of the CoP cannot

be passive; the whole purpose of the CoP is for a group of like-minded educators to share

their knowledge and experiences in an informal online professional learning platform

(Booth & Kellogg, 2015). As stated, CBE is not new to higher education; however, it is

new to many faculty who are currently teaching in higher education using the traditional

clock-hour and teacher-centric model. Developing a CoP affords the CBE experts and the

novice members to participate within the community of practice to construct knowledge

(Nistor & Fischer, 2012). Experts such as other professors who have taught in CBE

faculty roles, to the professional development staff who have provide the support and

training resources for faculty all coming together concentrating on one topic, a CBE

method in higher education.

Faculty are accustomed to more popular types of professional development, such

as conferences, workshops, seminars, and lectures (Green, Hibbins, Houghton, & Ruutz,

2013). However, when faculty are allowed to engage collaboratively, a new awareness

occurs, leading to new instructional innovations and developments (Meijs et al., 2016).

Faculty who are provided a safe, supportive, and collaborative setting, such as an online

CoP, can broaden knowledge, skills, mindsets, and viewpoints (Voogt et al., 2015).

However, in order for the CoP to be of benefit all member must participate. As Nistor and

Fischer (2012) shared in their study "knowledge can be expressed and applied in a CoP only through participation" (p. 123).

Benefits of a CoP

Having the support of stakeholders in the decision of a CoP approach for use in professional development is a necessity. First, one of the benefits in developing CoP is that the platform goes beyond a mere common-interest group of sharing knowledge and best practices. Many times, members participate in joint activities to share information, allowing members to learn from each other and often introducing new diverse perspectives while developing a learning partnership around a common agenda (Golden, 2016; Tomkin et al., 2019; Wenger, Trayner, & de Laat, 2011). Second, there is a societal value when the CoP faculty contribute to the well-being of stakeholders outside individual's higher education institution, namely the graduates who will contribute to society after graduation. Finally, a CoP approach provides the opportunity for educators to participate in high-impact professional development, which, in turn, will have a positive effect on student performance, making a CoP a cost-effective benefit for society as a whole.

The benefits from faculty participating in an online CoP professional development community are numerous. Golden (2016) identified several themes regarding faculty perceptions on the benefits of and value of CoP interaction to teaching practice:

- Shared practice/professional growth and development.
- Fueling change/promoting self-knowledge/promoting reflective practice.
- Peer support/mentoring/motivation.

- Trust-building/safe environment.

- Community building/preventing isolation.

- Sharing resources/modeling techniques.

Also, faculty in a CoP can provide emotional support by conversing with other like-minded faculty and have increased self-confidence when sharing ideas and offering positive feedback (Golden, 2016). Faculty in a CoP can also gain a sense of personal fulfillment and fellowship when working collaboratively with others. Golden (2016) states collaborative faculty groups allow for the co-creating of new knowledge and ideas to help improve teaching by identifying and discussing challenges and strengths and finding solutions.

Higher education institutions are seeing more and more limited funds and resources, especially for professional development. In the implementation of a CBE method, higher education institutions should expect to break-even by the fifth year of operating (Rivers, Gibson, Contreras, Livingston, & Hanson, 2019). A CoP online site will offer full-time and adjunct faculty access to CBE best practices through professional development, support, and training resources in a cost-effective manner. Furthermore, utilizing the university's already constructed course management system will provide faculty with a familiar learning space.

A cost-effective and innovative professional development initiative will benefit not only internal stakeholders but societal benefits may follow. There is an apparent connection between improved faculty knowledge and skills through professional development and student satisfaction and success (Shaha, Glassett, Rosenlund, Copas, &

Huddleston, 2016). Shaha et al. (2016) stated that to address continued societal needs, it is imperative for educational institutions to select professional development with proven impacts on student learning as well as faculty. It is strongly recommended that institutions empower educators and provide them with the resources needed to make a difference in society through impactful education (Shaha et al., 2016).

Offering a cost-effective online professional development initiative might help the university meet the needs of faculty teaching in a learner-centric model such as CBE.

Findings in Support of Project Content

The findings from my study might provide an answer to the university's problem of how to provide professional development, support, and training resources to its faculty in the implementation of a CBE method. Also, identifying an effective framework of best practices may not only lay the groundwork for the recommendation of a cost-effective professional development initiative, a CoP online learning site but also may serve as an opportunity for faculty to learn with other CBE faculty. The effective framework of best practices for professional development, support, and training resources captured from the panel of CBE experts who participated in the study will provide the basis for the CoP online learning site.

Literature Review Summary

Supported in the literature review was the rationale to provide key stakeholders with a position paper-the genre for the distribution of the evidences of the recommended solution to the key stakeholders. Additionally, in my review of the study and literature review, I identified the recommendation of a cost-effective CoP online learning site for

faculty. Further, I found that professional development, support, and training resources would provide the university with a plan to meet the needs of faculty who will be teaching in a CBE method. In this position paper, I advocate that administrators at the university take steps to initiate the proposed recommendations.

Project Description

In developing a project, developers need to determine the project's outcomes, requirements, and content before the implementation. Furthermore, administrative aspects of the project need to be identified, such as time to completion, budget, staffing, and evaluation methods. A position paper serves as the method of communication to key stakeholders. The report provides a brief synopsis of the research study and persuade the key stakeholders to consider the proposed solution to the issue on the needs of professional development, support, and training resources for faculty teaching in a CBE method. The context of the project is to recommend that the university administrators allow the development of a CoP online learning site as a cost-effective faculty professional development initiative for faculty teaching in a CBE method. The need is to fulfill the university's goal of providing CBE as a method of instruction to meet the needs of today's adult learner. To implement a CBE method, providing professional development, support, and training resources to faculty is crucial. The outcome is an opportunity for faculty to develop knowledge and skills in a competency-based model and ultimately bring societal benefits to both the university and the greater competency-based education community by strengthening overall programs and student success within them.

Supportive Roles and Resources

Today's higher education administrators are faced with an evolving population of students, most notably an influx of adult learners (Anderson, 2018). As student populations evolve, higher education institutions investigate ways to create innovative pathways to meet the needs of adult learners. One such pathway is CBE. A CoP online learning site will need the full support of administration, staff, and faculty. A supportive environment is necessary to drive effectiveness within the organization, specifically between faculty and administration (Velez, 2015).

Roles. Multiple departments would be involved in the orchestration of the CoP. To encourage faculty participation in the professional development administrative support is necessary. Also, administration can provide additional support in the form of incentives, lower faculty loads, financial benefits, and something as simple as verbal acknowledgment.

The information technology department needs to develop the online learning site in the learning management system, in addition to creating access to CBE experts outside the university. The Center for Excellence department, using the identified best practices results to serve as a guide in the development of the CoP, will serve as designer, technical support, and leader.

The faculty identified to teach in the CBE method, will serve as the members of the CoP, along with CBE members outside the institution to assist in providing support, mentoring, resources, and professional development.

Resources. As with any new implementation, there are financial considerations, including additional personnel and additional responsibilities of current personnel. Also, the identification of any new or needed technologies may arise as the project progresses. The current learning management system will house the CoP online learning site, eliminating the need for any new software or hardware.

Potential Barriers and Solutions

Change within any organization can cause challenges and obstacles. Obstacles that may affect the development of a CoP online learning site include the lack of administrative support, time, and motivation of faculty, technical support, and incentives for the faculty switching to a CBE method. Also, the development of the CoP as a professional development tool for CBE faculty needs to be effective. Chalmers and Gardiner (2015) stated for professional development to be effective four criteria need addressing:

- The framework must be relevant to the purpose of the teaching.
- The framework must have rigor and be founded on a theoretical and evidence-based model.
- The framework must take into account contextual factors.
- The framework must have reliability and have been tested in a variety of universities.

If the CBE faculty do not find value and purpose in the CoP online learning site, the outcomes of the project may not be realized.

My position paper offers a suggestion to help lessen anticipated obstacles to the success of the CoP online learning site. Loberti and Dewsbury (2019) suggested following a logic model approach to project design. Having a structured outline in the project design helps in identifying and monitoring goals, fostering collaboration, and designing comprehensive initiatives (Loberti & Dewsbury, 2019). A flowchart-style mapping demonstrates a clear distinction between the program's purpose and evaluation (Loberti & Dewsbury, 2019).

Implementation Time Table

The academic team is a crucial part in the implementation timetable of the CoP site. The academic team must approve the content, including the purpose, goals, outcomes, and evaluation methods. The IT department needs to develop the online learning site, and the Center for Excellence will need time to work on the design. The academic team must notify potential faculty who will teach in a CBE method of the CoP online learning site, explaining and showing support for the new professional development resource. Table 7 displays the development of the project and content tentative schedule.

Table 7

Professional Development Plan: A CoP Online Learning Site

Month	Action
Month 1	Present position paper to the university academic team (Vice President of Academic Affairs/Dean). The dean will inform identified faculty who will be teaching in a CBE method of the CoP online site. - Obtain approval of the content, including the purpose, goals, outcomes, and evaluation methods. -Educate CBE faculty on the benefits of a CoP.
Month 2	IT and Center for Excellence -Set up structure of CoP in the learning management system. -Set up the access to outside CBE experts. -Obtain permission to CBE listserv.
Month 3	Center for Excellence -Using best practices from research findings to lay the framework of the course. -Develop examples of sharing resources to share with faculty. -Provide training for faculty on using the CoP. -Develop resource manual for faculty outside of institution on how to use the CoP.
Month 4	-Invite faculty to join the CoP. -Send invitation to CBE faculty outside institution by using CBE listserv.
Month 5	Monitor and support progress. Make any necessary changes.
Month 6	Evaluation

Note. This table contains the tentative timeline for the CoP online learning site.

Project Evaluation Plan

An evaluation plan needs to include a range of qualitative and quantitative

indicators, which are appropriate for the intended outcomes and goals of the project for

short- and long-term evaluation (Chalmers & Gardiner, 2015). An evaluation plan needs

be flexible and acknowledge that changes in teaching occur over time (Chalmers &

Gardiner, 2015). In understanding the effects of the CoP online learning site, the

evaluation method should be used to assist academic administrators and developers as to

how and why the CoP is effective in both the short and long-term development of faculty

in a CBE method.

This project employs a combination of summative- and formative-type

evaluations (see Table 8).

Table 8

Online CoP Evaluation

Thank you for taking time to complete this survey. There are five (5) questions taking
approximately 10 minutes to complete. Your participation in highly appreciated.

1. The online CoP learning site is a valuable tool for providing the professional
   development, support, and training resources for me to teach in a CBE method?
   (Provide a numerical response of your agreement to this statement based on a 1
   through 5 scale where 1 = strongly disagree and 5 = strongly agree.)

2. The online CoP learning site has helped me understand key principles of CBE.
   (Provide a numerical response of your agreement to this statement based on a 1
   through 5 scale where 1 = strongly disagree and 5 = strongly agree.)

3. The online CoP learning site has increased my understanding of how to create
   competencies. (Provide a numerical response of your agreement to this
   statement based on a 1 through 5 scale where 1 = strongly disagree and 5 =
   strongly agree.)

4. The online CoP learning site has provided me with the necessary professional
   development and support to teach in a CBE method. (Provide a numerical
   response of your agreement to this statement based on a 1 through 5 scale
   where 1 = strongly disagree and 5 = strongly agree.)

5. Briefly describe your overall experience using the online CoP learning site.

Note. This table is a brief outline of a summative evaluation.

A summative evaluation will evaluate the quality and success of the project to determine the achievement of the stated outcomes. A formative evaluation will evaluate initial and ongoing project activities, starting with the project development and continuing through the implementation process. An ongoing evaluation report will be given to CoP stakeholders based on the continuous monitoring and the reporting of activities and interactions. A continuous evaluation plan for the project will not only help to confirm the project but will also help to substantiate faculty improved knowledge of CBE methods. Table 9 provides a brief outline of the project's outline evaluation methods.

Table 9

Project Evaluation Plan

Objective	Responsible	Timeline	Evaluation measure	Instrument
Complete progress reports to the academic team (VP of Academics and Dean)	Center for Excellence	End of month four	CoP online learning site and university faculty members	Formative assessment progress reports
Participation in the CoP with university	Center for Excellence	End of month six	University faculty will be familiar with CoP site	Summative assessment open-and closed-ended survey
Review instructional strategies	Center for Excellence	End of month eight	University faculty will discuss the pedagogical practices used	Summative assessment open- and closed-ended survey
Sustained objective share the learned instructional strategies among university faculty and CBE experts	Center for Excellence	On-going from end of month nine	University faculty will discuss and reflect on the pedagogical practices used	Summative assessment open- and closed-ended survey

Note. This table is a brief outline of the project's evaluation plan.

Project Implications Including Social Change

In the position paper, I provided the university with suggestions of why and how to implement the recommended CoP online learning site for CBE faculty. The CoP will provide the university with a plan to implement the professional development, support,

and training resources needed for faculty who will be teaching in a CBE method. The research findings from this study might assist in the development of the CoP by utilizing the effective framework of best practices that were identified by the panel of CBE experts. The sharing of this information with other CBE faculty, both locally and nationally, has far-reaching implications for adult learners, graduates, and higher education.

The creation of a CoP online learning site will provide Northwood Pike University with a strategy to implement the needed professional development, support, and training resources to implement a CBE method at the university. The CoP online learning site will provide access to not only the identified effective framework of best practices but will also provide novice CBE faculty the opportunity to communicate and network with seasoned CBE faculty.

From this project, there may be an effect on society-at-large, especially with the renewed interest in CBE methods in higher education. As mentioned previously, there is a growth of CBE methods in higher education, meaning faculty are facing new challenges, such as, what role faculty will play, how to measure competencies, and how to develop competencies (Newbold et al., 2017). Improved faculty success in a CBE method in-turn serves as improved student success, which is a direct tribute to the educational institution success. As graduates share their learned knowledge and experience in the workforce, society benefits as the high-impact education improves individual lives (Shaha et al., 2016). Finally, positive social change could result through

the sharing of published or presented material to assist other CBE faculty and higher education institutions that intend to implement a CBE method.

Conclusion

In Section 3, I outlined the description, goals, and rationale for my project, a position paper presented to the university. The recommendation is for the university to create a CoP online learning site. To support the rationale for the submission of a position paper, I conducted a review of the literature to advocate for a well-investigated solution and to support the rationale for why the university should create a recommended cost-effective professional development CoP online learning site. Implications of the project from a local and broader perspective were discussed. Also, I explained the societal benefits derived from my study findings concerning the recommended project.

The context of my proposal is to present a position paper to the local site, suggesting the university creates a CoP online learning site to provide professional development, support, and training resources by effective best practices. The need is to support faculty who will be teaching in a CBE method. The outcome will be an opportunity for faculty to increase knowledge and skills relating to CBE methods and, ultimately, bring societal benefits to both the university and the greater community.

My goal is for university to review my position paper and accept my recommendation to create a CoP online learning site to provide professional development, support, and training resources for CBE. To provide support as to why the university should accept my recommendation, I constructed my evidence based on three conceptual theories: Knowles' et al. (2005) adult learning theory, Lave and Wenger's

(1991) theory of CoP and Vygotsky's (1978) social learning theory. A review of the literature revealed a social-learning platform, professional development approach could provide faculty with a forward-thinking, collaborative, and connected way to increase knowledge and skills (Armellini & De Stefani, 2016; Booth & Kellogg, 2015; McKenna et al., 2016; Meijs et al., 2016; Nistor et al., 2014b; Tomkin et al., 2019). Also, participation by faculty in a CoP-type professional development have reported higher satisfaction and success (Meijs et al., 2016; Saroyan & Trigwell, 2015).

I presented an evaluation plan, including the use of summative and formative evaluations to assess initial and ongoing project activities. Also, to substantiate improved knowledge of the faculty the use of a sustained evaluation plan for the project is recommended.

The potential outcomes from the project included benefits for the local site, as well as nationally. The university will have a plan to provide faculty who will be teaching in the CBE method the opportunity to obtain professional development, support, and training resources through an online CoP learning site, with other CBE experts from outside the institution also invited to participate. Students enrolling in the CBE method will benefit from having faculty who have the knowledge and skills to teach in a CBE method. Finally, when the CoP members share their knowledge, ideas, and experiences, they will be contributing to the well-being of stakeholders outside the university, namely the graduates who enter the workforce, spreading knowledge to the greater community.

In Section 4, I discuss my final reflections and conclusions of my proposed project. I discuss the project strengths and limitations and conclude with a reflection of my doctoral journey, describing my growth as a scholar and leader.

Section 4: Reflections and Conclusions

Introduction

I will present a position paper to the university, providing a synopsis of the research study and recommended solution to address the professional development, support, and training resources needed for faculty in CBE. The position paper might provide the university with a deeper understanding of the issue to better inform their decision on a course of action for the professional development, support, and training resources for a CBE method. The recommendation is supported by the current literature and findings from the panel of CBE experts whose data provided a list of effective best practices for use in the development of a CoP online learning site.

The position paper includes the findings from my research to provide a well-researched answer to the university's issue on providing professional development, support, and training resources to CBE faculty. The goal is to help faculty who will move from the teacher-centric model to the CBE model, which is learner-centric. The findings not only lay the groundwork for the recommendation of a CoP online learning site but may also serve as a learning tool for other faculty. There are many potential benefits to an online learning CoP site, including sharing knowledge, best practices, peer-to-peer mentoring, contributing to the well-being of stakeholders outside the university, and the opportunity to participate in a high-impact professional development.

I conclude this section with a discussion of the project strengths and limitations and recommendations for alternative approaches. Finally, I provide a reflection on the

importance of the work, considerations of potential impacts of my project study on social change, and recommendations for future research.

Project Strengths and Limitations

The project provides the university with a scholarly implementation plan to address the issue of providing professional development, support, and training resources for CBE faculty in the implementation of a CBE method. The following deliverables are recommended to the university senior executive team:

- Inclusion of the list of effective best practices as identified from the research study to lay the groundwork for the CoP online learning site to assist CBE faculty in the professional development, support, and training resources needed.

- A cost-effective in-house professional development through the creation of a CoP online learning site where faculty can access effective best practices, share knowledge, participate in peer-to-peer mentoring, and potentially contribute to the well-being of stakeholders outside the university.

The strength of this project depends on how well the faculty accept and adapt to the use of a CoP online learning site. Some limitations to consider in the implementation include the potential reluctance of faculty, lack of technology skills, apprehension to share ideas with others, time commitment, and the lack of skills to learn how to effectively add artifacts to a CoP online learning site (McKenna et al., 2016). Another possible limitation is the possibility of the CoP online learning site having a small number of participant's or the content is too unique for faculty to assimilate into CBE

methods. In other words, the CoP online learning site might limit the types of CBE

learning content that is relevant to the university that can be shared and effectively used

by faculty. The CoP online learning site, if developed, has the potential to provide faculty

at the university with variety of CBE experts sharing their best practices, knowledge, and

skills involving all aspects of CBE.

Recommendations for Alternative Approaches

With continued growth in CBE methods, university administrators must provide

opportunities for faculty members to increase their knowledge and skills related to CBE

instructional strategies. A review of the literature revealed that professional development

in higher education is important in today's ever-changing climate (Saroyan & Trigwell,

2015). New trends such as CBE send higher education institutions scrambling to provide

relevant professional development, which in turn makes it difficult for faculty to

adequately prepare. However, a social learning community, such as a professional

development online learning CoP approach, could provide the university with an

interactive, innovative, and connected way to increase faculty's knowledge and skills

concerning CBE.

A critical factor in the success of a CoP online learning site is administrative

support in the form of encouragement, assistance, and appreciation of the importance of

faculty participation (Reilly, Vandenhouten, Gallagher-Lepak, & Ralston-Berg, 2012).

Administrative support for professional development is an essential key to the success of

continued professional development. Administrators need to encourage faculty to be open

and receptive to the professional development activities. A recommendation to overcome

some of the project limitations could include administration offering faculty a promotion or offer financial incentives. An administration supportive of professional development could motivate faculty to participate in the CoP online learning site.

Scholarship

My doctoral journey has been one of the most challenging and fulfilling journeys I have accomplished to date. As a budding scholar-practitioner, I now have a deeper understanding of what it truly means to be a scholar and how I can effect positive social change through experience and reflection. Throughout my journey, I have learned new ways of being productive while conceptualizing how my research concerning the broader higher education community, can make a social difference.

I have reached a critical learning point in my doctoral journey moving from one of novice researcher into a deeper understanding of that of a budding scholarly practitioner where my knowledge and expertise have increased. Through a more profound reflection, I have a more precise and more diverse thought processes which I feel leads me to better developed philosophical understandings of the possible implications from my research and the effects on positive social change.

The significance of trust and respect not only in oneself but also in the process and journey is a lesson worth mentioning. Working with influential professionals, I have learned the importance of collaborative learning. I have become a better communicator because of the collaborative learning environment. Using my previous experience and education, I was able to investigate a pertinent issue related to how to provide professional development, support, and training resources for faculty in a CBE method.

Project Development and Evaluation

The main reason I conducted a project study in relation to CBE methods was to assist Northern Pike University in the successful implementation of a CBE method. In my role at the university, I provide the professional development, support, and training resources for faculty. When I began this journey, I had little knowledge on the implementation of a CBE method, which not only intrigued me but excited me as well. After the university conducted their initial research on the topic and found out there was a need for faculty professional development I wanted to study and create a project that would help overcome the need.

As I went through my academic leadership courses and I considered the possible research methods I could focus on. I decided to focus on a project study because I knew the university was in the process of moving forward with the implementation of a CBE method and a project study could be applied immediately to help address the project. The project genre that seemed to best fit my study was a position paper. The position paper will provide the university administrators with a summary of my research study and possible solution to address the universities issue of providing professional development, support, and training resources to faculty teaching in a CBE method.

Leadership and Change

My leadership skills flourished in several ways throughout the study. I gained leadership skills, knowledge, and experience of scholarly research throughout the process as well as my skills of designing and implementing a qualitative case study. However, upon reflection my most enjoyable part of my research was what I learned from the CBE

experts. A colleague once told me that when we learn from others we become better leaders in our journey to personal growth. I gained a better understanding and respect to the faculty who are currently teaching in a CBE method and the dedication, skills, and knowledge needed. Through my questionnaires, I was able to obtain a better understanding of the professional development, support, and training resources needed for faculty who will be teaching in a CBE method. I feel my project could provide a positive social change to not only the university but to other higher education institutions planning to implement a CBE method.

One of my greatest achievements was not necessarily conducting the research or disseminating the findings but knowing that my newfound knowledge could help improve a situation while creating a positive social change. If the university adopts my recommendation of a CoP online learning site, I feel my research will have made a difference to the professional development, support, and training resources for faculty. Also, I feel it would be a testament to my knowledge and experience and making a difference through my scholarly learning.

Analysis of Self as a Scholar

As I went through the journey of gathering, analyzing, synthesizing, interpreting, and reporting the findings, I realized that my level of critical thinking skills had grown exponentially. My scholarship process has allowed me to gain a better understanding of the amount of time and dedication needed to conduct a thorough study.

In using the Delphi method for my study, I have learned how to go through the process of soliciting and securing participants, how to develop questionnaires, and how to

analyze and interpret the data collected. Up to this point, I had very little experience in these areas, but now I feel more confident in my understanding of how to conduct research. I now feel I can conduct additional research and only become better in the process when I do move forward.

As I developed my position paper, I needed to find a way to deliver the professional development, support, and training resources to a group of novice CBE faculty. As I went through the journey of gathering literature, I soon realized developing an online CoP comprised of expert and novice CBE faculty would be the most beneficial.

Analysis of Self as Practitioner

When I began this process, I did not see myself as a practitioner. It was not until after about a year into the process that I started seeing myself as a budding practitioner. As I was looking for ways to provide professional development, support, and training resources to faculty teaching in a CBE method I learned to take into account that my previous training and experience could be of value. Through my current role, I am the one who researches, develops, and delivers the professional development, support, and training resources to faculty. This part of my professional experience led me to the problem statement, research method, and the idea to share what I had learned with others through a position paper.

Analysis of Self as Project Developer

I have worked on other projects in my professional career such as the working with a team to develop a center for teaching and learning. However, after this study I have learned when working on a project by yourself there is a need for a higher level of

accountability such as setting obtainable goals. In order to set obtainable goals, I needed

to look not at what was in front of me but ten steps ahead of where I needed to be. In

selecting the project, I had to choose a deliverable that would connect the problem and

the research behind the problem in order to reach a feasible solution. After I selected the

project, I was responsible for conducting the research to setup the deliverable of a

position paper. A position paper will provide the university with my research and a

professional development initiative to provide the professional development, support, and

training resources for faculty teaching in a CBE method.

<p align="center">**Implications, Applications, and Directions for Future Research**</p>

An important implication of my study is that higher education institutions will

need to provide professional development, support, and training resources if they are

going to be successful in implementing a CBE method. CBE methods are a new

pedagogical approach, which is changing the landscape in higher education (Bansal et al.,

2017; Defa et al., 2016; Newbold et al., 2017). With the new pedagogical approach,

faculty roles and teaching philosophies have changed, requiring professional

development, support, and training resources in order for faculty to be successful in this

new landscape. The current state of CBE shows approximately 600 postsecondary

institutions are in the designing or implementation phase of a CBE program (Fain, 2016).

My recommendation, if implemented, has the potential to bring positive social

change for the university, faculty, and society as new knowledge in CBE is discovered,

transformed, and shared through a CoP online learning site. Social learning infused

among the CoP members sharing knowledge and collegiality and, possibly, paid forward

in society. As the growth in CBE continues, higher education institutions will continuously need to consider how to support faculty in this changing pedagogical approach. Future research could include a mixed methods Delphi study on how effective is using a CoP to provide professional development, support, and training resources for faculty teaching in a CBE method. The project could be used as the basis of the research as faculty are invited to participate in the online CoP. The thought of having novice faculty and expert faculty in an online CoP sharing knowledge and experience on CBE methods would add to the limited amount of current research available on the problem of professional development, support, and training resources.

Reflection on Importance of the Work

In this study, I sought to identify effective best practices for professional development, support, and training resources for faculty teaching in a CBE method. A CBE method is an outcome-based approach allowing a student to progress or advance at their own pace while mastering specific skills in a competency. A CBE method provides students with the opportunity to complete their degree in less time and a more cost-effective manner than a traditional model (Council of Regional Accrediting Commissions, 2015). A CBE method changes the pedagogical design from the traditional environment to a CBE environment. A CBE environment focuses more on the student and their level of competencies. Faculty no longer set the pace nor deliverables instead the educational elements are driven by the students (Newbold et al., 2017). Because of the change in pedagogical design, the study findings and the culminating project are essential to many higher education stakeholders. The CoP online learning site will

provide opportunities for faculty to increase their knowledge and skills relating to CBE

methods and ultimately bring societal benefits to the university and the greater

community. The biggest lesson I learned from this study and the project is that I have the

professional knowledge to enact social change.

Conclusion

This study served as the impetus to develop a list of best practices for professional

development, support, and training resources for faculty in a CBE method. The literature

provided a wealth of information about faculty roles in CBE; however, there was little

focus on the impending change from a teacher-centric model to a learner-centric CBE

model nor the implications for faculty (Ashby et al., 2018; Gruppen et al., 2016). As CBE

programs continue to grow in higher education institutions, there will be an ongoing need

to seek new answers as to how institutions can provide professional development,

support, and training resources for faculty. Without effective professional development,

support, and training resources, faculty may be ill-prepared to teach in this new

pedagogical method. An important implication of my study is that higher education

institutions who are intending on implementing a CBE method will need to provide

professional development, support, and training resources to their faculty if they are

going to be successful in the implementation.

While there are numerous types of professional development available for faculty,

having a CoP online learning site will allow faculty at the university to share their

knowledge and skills with other faculty who are currently teaching in a CBE method.

Having an online learning platform for faculty to learn new instructional strategies

through a shared learning approach could provide better outcomes than other professional development activities (Golden, 2016). The ever-changing higher education landscape, namely the implementation of a CBE method, will warrant continued research in how to best provide professional development, support, and training resources for faculty.

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Appendix A: The Project

Executive Summary

This executive summary has been prepared for a Northern Pike University senior

executive team. The summary is a result of a doctoral project study completed by Kerry

Hannah as part of her doctoral degree from Walden University. This summary will

provide the senior executive team with information specific to the research problem and

recommendation from the results of the project study.

The problem identified and addressed in the project study stemmed from a

northeastern Michigan university seeking to implement a Competency-Based Education

(CBE) model to meet the needs of their adult learner population. The professional

literature at the national level indicated limited literature on best practices about the

professional development, support, and training resources for institutions intending to

implement a CBE method (Curry & Docherty, 2017; Dragoo & Barrows, 2016). To

address the problem, a qualitative Delphi study was conducted to have a common

framework for the design and delivery of a CBE professional development, support, and

training resources. A panel of eight experts participated in the Delphi study. Two rounds

of questionnaires consisting of open- and closed-ended questions, hosted by the online

platform Survey Monkey, were distributed to the panel of experts through email

communication.

The round 1 questionnaire data analysis revealed 41 themes associated with

professional development, support, and training resources for faculty teaching in a CBE

method. The themes identified in the round 1 questionnaire were then used to develop the

round 2 questionnaire. After the round 2 questionnaire, nine best practices were identified

consisting of essential professional development, support, and training resources for

supporting faculty teaching in a CBE method. These results are significant for obtaining

two goals outlined in this study. The first goal is to assist the local site by providing

insight into the faculty professional development, support, and training resources needed

in the implementation of a CBE method. The second goal is providing the opportunity for

faculty to enhance their knowledge and skills relating to CBE methods and, ultimately,

bring societal benefits to both the university and the greater community.

Based on the results of the study findings, the recommendation is to implement a

community of practice (CoP) online learning site. The CoP online learning site will

provide the university with a cost-effective and well-researched solution to increase

faculty knowledge and skills associated with CBE.

Background

Problem and Supporting Literature

A CBE method transforms the faculty role from the all-in-one-lecturer, assessor,

and curriculum developer to separated roles. Faculty roles in a CBE method serve as

assessors, mentors and coaches, instructional facilitators, community partners, and

content and subject matter experts (Newbold, Seifert, Doherty, Scheffler, & Ray, 2017).

The change in faculty roles create unique demands on faculty. One such demand is

learning the different roles associated with CBE (Dragoo & Barrows, 2016). To meet the

demand of the change in faculty roles, higher education institutions will need to provide

professional development, support, and training resources to support their faculty in their new roles (Balmer & Richards, 2012; Welch & Plaxton-Moore, 2017).

As CBE methods continue to explode in popularity in higher education, the need for professional development, support, and training resources for faculty who will be teaching in this new method is crucial. Competency-based education defined as an outcome-based approach to education that combines a variety of instructional methods and assessments to evaluate a student's mastery of an identified set of competencies (Gervais, 2016; Kelchen, 2015; Nodine, 2016). Adult learners in Michigan have the highest number some earned college credits but no degree (Austin, 2015). A goal of the local site is to enhance their understanding of CBE and the professional development, support, and training resources needed for faculty for a possible CBE implementation.

The Importance of Professional Development, Support, and Training Resources

CBE models have increased significantly in higher education over the past decade. This increase has seen a faculty tasked with changing their curriculum, assessment strategies, and learning content. However, there is little known about the types of professional development, support, and training resources for faculty (Bansal, Supe, Sahoo, & Vyas, 2017; Cooper, 2016; Cunningham, Key, & Capron, 2016; Echols, Neely, & Dusick, 2018; Lurie, Mason, & Parsons, 2018; Newbold, et al., 2017).

CBE, in a new pedagogical approach, faculty no longer teach students in a traditional teaching-centric model. Instead, faculty are seen more as coaches and mentors, both similar to and different from a traditional model (Echols et al., 2018; Newbold et al., 2017). In a traditional teaching-centric model faculty, rely on their current teaching

philosophies using classroom lectures, discussions, classroom activities, and just-in-time

learning (Newbold et al., 2017). However, faculty who teach in a CBE method are a

complete contrast to the traditional model. In a CBE method the student is the driver of

the pace, structure, and content deliverables. A student in a CBE method decides what

they want to learn and how long they will take them to master the competency. This

method alters the current didactic teaching and learning philosophies to a new

pedagogical paradigm resulting in the need to provide faculty with the tools they will

need to be successful in this new paradigm, professional development, support, and

training resources (Curry & Docherty, 2017; Newbold et al., 2017).

Faculty who will be teaching in a CBE method need to have a certain level of

skills and ability to successfully transition to the new CBE pedagogical paradigm

(Hartman, Bann, Barton, & Pearce, 2015). To ensure faculty have the necessary skills and

ability, higher education institutions needs to provide timely and effective faculty

professional development, support, and training resources (Echols et al., 2018; Hartman

et al., 2015). Chacko (2014) shared faculty meeting the challenge of changing their

pedagogical format will need a variety of ongoing professional development. The learner-

centric model used in CBE methods requires faculty to know how to develop outcome-

based rubrics, how to gather learning resources specific to a CBE paradigm, writing

competency statements and outcomes, and overall developing a new CBE curriculum

(Bansal et al., 2017; Chacko, 2014; Cooper, 2016; Defa et al., 2016; Newbold et al.,

2017).

With the renewed interest in CBE, there has been a significant increase in higher education institutions intending to implement or have implemented a CBE method. In 2018, an assessment of 500 colleges and universities was conducted on the current state of CBE about their interest in CBE or activity related to CBE (Lurie et al., 2018). A surprising number of institutions, 430, reported either an interest in adopting or that adopting a CBE program was already in process (Lurie et al., 2018). With the surge in higher education institutions implementing a CBE method, there will be a perpetual need for professional development, support, and training resources for faculty. This paper will address how the local site could assist faculty in developing their skills and knowledge as it relates to CBE pedagogy through professional development, support, and training resources.

Professional Development: Enhancing Faculty Knowledge and Skills using a CoP

The purpose of professional development is to learn and apply new knowledge and skills to improve faculty performance. There is a plethora of terms associated with professional development such a faculty development, educational development, academic development, professional learning, community of learning, and more recently, community of practice (CoP) (Saroyan & Trigwell, 2015; McKenna, Johnson, Yoder, Guerra, & Pimmel, 2016). No matter the term associated with the professional development, educational leaders need to build and foster a shared vision around the professional development, support, and training resources faculty will need.

Developing single exclusive workshops are proving to be a non-effective way of providing professional development, support, and training resources to faculty (McKenna

et al., 2016; Meijs, Prinsen, & de Laat, 2016). Current shifts in the delivery of professional development, workshops and seminars, have higher education institutions looking at other means of delivery, such as a CoP (Meijs et al., 2016; van As, 2017). A CoP has the potential to deliver a long-term collaboration in an online platform allowing faculty to build relationships and trust over a long period and while providing professional development, support, and training resources, in addition to mentoring (Meijs et al., 2016; van As, 2017). A CoP provides the opportunity for faculty to engage collaboratively; when this happens, a new awareness occurs, leading to new instructional innovations and developments (Meijs et al., 2016). When faculty are given a safe, supportive, and collaborative setting, such as an online CoP, it can broaden knowledge, skills, mindsets, and viewpoints (Voogt et al., 2015). Also, a CoP could provide the opportunity for new CBE faculty to collaborate with experts in problem-solving issues such as how to change current learning outcomes into competency-based outcomes that are based on industry needs as well as developing high level formative and summative assessments (Chacko, 2014; Rossing & Lavitt, 2016).

Benefits of a CoP Online Learning Site

There are many advantages to developing a CoP online learning site. Golden (2016) shared several themes regarding faculty perceptions on using a CoP to enhance their skills and knowledge:

- shared practice/professional growth and development,
- fueling change/promoting self-knowledge/promoting reflective practice,
- peer support/mentoring/motivation,

- trust-building/safe environment,

- community building/preventing isolation, and

- Sharing resources/modeling techniques.

In addition to faculty enhancing their skills and knowledge, a CoP has other advantages such as:

- a cost-effective professional development initiative (McKenna et al., 2016),

- a global collaboration with no limits on location or time (McKenna et al., 2016),

- a shared repository or resources (McKenna et al., 2016),

- Societal benefits providing professional development affecting not only faculty but also students (Shaha, Glassett, Rosenlund, Copas, & Huddleston, 2016).

Overview of the Study

Purpose and Rationale of Study

The goal of this qualitative Delphi method study was to gather expert opinions about what experts identify as significant professional development, support, and training resources for faculty teaching in a CBE method. The rationale was to assist Northern Pike University in the successful implementation a CBE method by providing an avenue for the professional development, support, and training resources needed for faculty to teach in a CBE method.

A two-round open- and closed-ended questionnaire using the Delphi method were deployed to answer the three research questions focused on professional development, support, and training resources.

Role of the Researcher

The role of a researcher in a Delphi method is different from other researcher roles in qualitative studies. In a Delphi method, the researcher is more of the planner and facilitator, dramatically reducing bias and creating an internal auditing process (Avella, 2016). In this Delphi method study, my primary role in this study was that of a planner and facilitator as all of the communication was completed electronically through email communication.

Study Design

A Delphi study was used as it provided the opportunity to obtain multiple expert opinions to determine if there was a broader consensus related to professional development, support, and training resources for CBE faculty. A Delphi method allows participants to voice independent opinions that would lead to reliable conclusions and consensus by collecting and synthesizing the opinions from the panel of experts (Avella, 2016; Dalkey & Helmer, 1962; Keeney, Hasson, & McKenna, 2005; McPherson, Reese, & Wendler, 2018; Murry & Hammons, 2017). Also, using a Delphi method is recommend when there is a limited amount of prior research, allowing the researcher to obtain a collection of subjective findings from a panel of experts (McPherson et al., 2018).

Study Participants

Purposeful sampling was used to invite CBE experts to participate in the study. Using purposeful sampling allows the researcher to select participants to be included in the study who can facilitate the expansion of the developing theory (Bodgan & Biklen,

2007). The CBE coordinator at the research site purposefully selected the panel of experts. Eight participants completed the two rounds of questionnaires, Table A1.

Table A1

Percentage of Expert Panel Participation for Each Round

Delphi round	Experts enlisted	Completed questionnaire	Response rate
1	8	7	87.5%
2	8	8	100%

Note. The number of participants who completed each round of the questionnaire.

Research

The purpose of this study was to gather expert opinions about what experts identify as significant in professional development, support, and training resources for faculty teaching in a CBE method. The study had three research questions related to the professional development, support, and training resources.

RQ1: What do experts identify as significant in faculty professional development for CBE teaching faculty?

RQ2: What do experts identify as significant in supporting CBE teaching faculty?

RQ3: What do experts identify as significant for training resources for CBE teaching faculty?

The results generated a list of best practices that will be used in the development of the CoP online learning site for professional development, support, and training resources for faculty teaching in a CBE method.

Data Collection and Analysis

The data analysis and collection procedures included two rounds of questionnaires, coding, methodological triangulation, member checking, and memo

bracketing to further the credibility of the identified codes and themes. The data yielded a framework of best practices for professional development, support, and training resources for faculty teaching in a CBE method.

In organizing the data, Braun and Clarke's (2006) six-phase thematic analysis was first used to consolidate the data from the round 1 questionnaire into more meaningful codes and themes (see Table A2).

Table A2

Six-Phases of Thematic Analysis

Phase	Description of the process
Step 1: Becoming familiar with the data,	Step 4: Reviewing themes,
Step 2: Generating initial codes,	Step 5: Defining and naming themes,
Step 3: Searching for themes,	Step 6: Producing the report.

Note. Adapted from "Using Thematic Analysis in Psychology" V. Braun and V. Clarke 2006, *Qualitative Research in Psychology, (3)*2, p. 87.

In using the six-phase thematic analysis, 41 themes were identified in the round 1 data set. In addition to using Braun and Clarke's (2006) six-phase thematic analysis, I also used a thematic map to help me illustrate the relationships between themes and ensure relations to the main theme. Using the identified themes from the round 1 analysis, the round 2 questionnaire was developed.

The round 2 questionnaire was an iterative of the round 1 data. The panel of experts evaluated seven main topics concerning the research questions using two dimensions. Dimension assessment one asked the participants to rank in order of importance from 1=lowest to 5=highest the components, elements, and traits identified in round 1 analysis. The dimensional assessment two, then asked participants to look at the same components, elements, and traits in assessment one and consider which ones can be

disregarded and which ones are crucial if a CBE program is to be effective. For the round 2 data analysis using the rankings of 5=highest in the dimensional one assessment and crucial in the dimensional two assessment I was able to identify nine themes concerning the research questions.

Summary of Findings

The findings of this study revealed a variety of professional development components, elements, and traits that can be used in the development of a CoP online learning site for faculty teaching in a CBE method. Nine themes emerged from the consolidation of the data collection processes (see Table A3).

Table A3

Major Themes Round 2 Concerning Research Questions

Research Questions	Identified Themes
RQ1: What do experts identify as significant in faculty professional development for CBE teaching faculty?	1. Clear and consensual statement of the target competencies 2. Understanding of student assessment 3. Competency frameworks and evidence necessary to judge competence 4. Assessment principles of CBE 5. Standards by which competencies are judged 6. Assessment skills and techniques 7. Blended and face-to-face format
RQ2: you were creating a professional development course to instruct new faculty how to teach CBE courses, what elements would be critical to include?	8. Assessment design
RQ3: What do experts identify as significant for training resources for CBE teaching faculty?	9. Assessment process

Note. The identified themes from the round 2 questionnaire concerning the research questions.

Nevertheless, as CBE continues to expand into higher education institutions, administrators and faculty need to understand the unique dynamics, which accompanies implementing something of this magnitude. In other words, as CBE continues to grow there will be a persistent need to discover professional development strategies that will help those intending to implement a CBE method.

Recommendation

The creation of a CoP online learning site emerged as a way to share the findings with the university. Also, the CoP online learning site may help the university to provide sustainable opportunities for the faculty to increase their knowledge and skills in CBE, which may carry-over into their non-CBE courses. A CoP online learning site will provide the university with the following benefits:

- An innovative solution for CBE faculty to build relationships at the university and globally while increasing their knowledge and skills in learning new professional development activities relating to CBE where faculty may share, reflect upon, and apply in the classroom.

- Nine engaging professional development, support, and training resources themes derived from the findings of the study that will lay the groundwork of the CoP online learning site to assist CBE faculty in enhancing their pedagogical skills on CBE;

- by offering a cost-effective, in-house, strategy for CBE faculty to increase their knowledge and expertise in CBE;

- with limited professional development funding, the utilization of the current

learning management system can serve as the portal for the new CoP online

learning site;

- Also, achieve greater success, as the university may increase enrollment by

  offering a CBE method program, and for society as a whole, as graduates go forth

  and share their knowledge and skills with the community-at-large.

Implementation Plan

Approval and support from the senior executive team must be granted to

implement the new CoP online learning site. Next, the academic team will be crucial in

the implementation timeline. The academic team will need to approve the content,

including the purpose, goals, outcomes, and evaluation methods. The IT department will

also be crucial as they will need to set up the online learning site, and the Center for

Excellence will need to work on the design. Also, the academic team will need to work

with the faculty who will be engaged in the CoP and prepare them for the new

professional development resource. Finally, faculty must be willing to endorse this new

format of professional development. Figure A2 provides a tentative schedule of the

implementation plan along with key stakeholders' duties.

Present Information to University
Month 1

- Present to Senior Executive Team
- Present to Academic Team
- Educate CBE faculty on benefits of CoP

Set Structure of CoP Online Learning Site
Month 2

- Meet with IT to set up structure of LMS
- Connect with outside CBE experts
- Center for Excellence develops purpose, goals, outcomes, and evaluation methods

Design and Deploy CoP Online Learning Site
Month 3-4

- Center for Excellence using best practices from research findings will lay the framework for the CoP
- Center for Excellence with develop example of sharing resources, resource manual on how to effectively use a CoP
- Academic Dean will send invitations to faculty to join CoP

Monitor, Support and Evaluate
Months 5-6

- Center for Excellence will monitor and support progress.
- Progress reports to senior executive team and academic team.
  Formative Evaluation
- Center for Excellence will monitor discussions and encourage participation
- Center for Excellence will post open-ended discussions to assess members satisfaction in the CoP
  Summative Evaluation

Figure A2. Six-month implementation plan for CoP online learning site.

Project Evaluation Plan. An evaluation plan will inform the university if the new CoP online learning site is successfully assisting the university in accomplishing its goal: successfully implementing a CBE method by providing professional development, support, and training resources to their faculty teaching in a CBE method. Key stakeholders will employ formative evaluation periodically throughout the implementation to assess initial and ongoing activities. A summative evaluation will evaluate the quality and success of the project to determine if the stated goals and outcomes have been achieved. A continuous evaluation plan will not only help to confirm the project but will also help to substantiate the faculty improved knowledge and skills of CBE methods. Table A4 provides a brief outline of the evaluation methods.

Project Implication

      Local Implications. The development of a CoP online learning site can provide the university with a plan to strengthen the knowledge and skills of faculty in CBE methods through professional development, support, and training resources. The nine themes derived from the study findings provide the framework for the design of the professional development, support, and training resources for faculty who will be teaching in a CBE method. The CoP will provide access to these themes and to outside CBE experts who can expand the themes.

      Societal Implication. This study has the potential to, once published, to assist other CBE faculty and higher education institutions intending to implement a CBE method. As graduates share their learned knowledge and experience in the workforce, society benefits as education improve individual lives (Shaha et al., 2016). Shaha et al. (2016) states to address continued societal needs, education institutions need to select professional development that has proven impact on student learning as well as faculty. Shaha et al. (2016) recommends that institutions empower educators in addition to providing them with the resources needed to make a difference in society through impactful education.

Table A4

Project Evaluation Plan

Objective	Responsible	Timeline	Evaluation measure	Instrument
Complete progress reports to the academic team (VP of Academics and Dean)	Center for Excellence	End of month four	CoP online learning site and university faculty members	Formative assessment progress reports
Participation in the CoP with university	Center for Excellence	End of month six	University faculty will be familiar with CoP site	Summative assessment open-ended survey
Review instructional strategies	Center for Excellence	End of month eight	University faculty will discuss the pedagogical practices used	Summative assessment open-ended survey
Sustained objective share the learned instructional strategies among university faculty and CBE experts	Center for Excellence	On-going from end of month nine	University faculty will discuss and reflect on the pedagogical practices used	Summative assessment open-ended survey

Note. This table is a brief outline of the CoP online learning evaluation plan. Outcome goal: to provide faculty teaching in a CBE method with the opportunity to increase their knowledge and skills concerning CBE.

Conclusion

The findings from this study may assist the local site in developing the knowledge

and skills of their faculty intending to teach in a CBE method. Also, the study may

provide the local site with the information to create a CoP online learning site where

faculty can access a repository of best practices identified from the research findings.

A desired outcome of the study would ultimately bring societal benefits to both the university and the greater CBE community by strengthening overall programs and student success within them. Finally, a positive social change could result in the sharing of published or presented material to assist other institutions in the implementation of a CBE method.

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Appendix B: Permission to Use Figure

From: Mason, Jessica
Sent: Monday, April 29, 2019 11:46 AM
To: Kerry Hannah
Subject: RE: [Jessica Mason] Permission to use graphic

Hi Kerry,

Thank you for your message. I'm glad to hear that the report will be useful for you. As long as you include the image with the appropriate citation, you are welcome to use it.

And, if you're ever looking to make connections or collaborate on CBE research, AIR also hosts a National Research Collaborative on Competency-Based Education and Learning. We'd be glad to talk with you about getting involved, and we've also recently released an RFP for research partnerships.

Best,
Jessica

-----Original Message-----
From:
Sent: Monday, April 29, 2019 11:04 AM
To: Mason, Jessica
Subject: [Jessica Mason] Permission to use graphic

Kerry Hannah sent a message using the contact form at https://www.air.org/.

Dr. Mason,

I am a doctoral student at Walden University. I am currently working on my dissertation on the topic of "Identifying Educator's Perceptions of Best Practices using a Delphi Method for Faculty Professional Development in the Implementation of a Competency-Based Education Model". The image I would like permission to use is on page 13 of the "Findings from the 2018 national survey of postsecondary competency-based education" document.

Thank you,

Kerry Hannah

Appendix C: Email Request for Research Site Permission

From: Kerry Hannah
Date: Monday, June 24, 2019 at 10:47
To: ██
████████████████████

Cc: Dorin Stanciu
Subject: Delphi Study Competency Based Education

██ ████████,

I am a doctoral student at Walden University, conducting a qualitative Delphi method study on best practices for faculty professional development, support, and training resources in a competency-based education method. The ████████ ███████████████████████████████ Program at your institution is well known as are you in the competency-based education higher education circles. Your expert knowledge of best practices in designing, implementing, or teaching in a competency-based education method plus that of your staff and colleagues would of benefit to my study.
Using the Delphi method I am gathering a consensus of expert opinions to develop a list of best practices in professional development, support, and training resources for faculty with the plan of writing a white paper to help other institutions who are planning on implementing a competency-based education method. There will be two rounds of questionnaires, 6 open-ended and 1 closed-ended questions with each questionnaire taking 15-30 minutes to complete.

I reached out to your institutional research board department, ██████ ████████, who recommended I contact you directly explaining the study and to obtain permission. I have obtained conditional permission from Walden University's institutional research board, approval number for this study is 06-18-19-0243191. Attached is a letter of cooperation for your signature and permission to conduct the study in your department. Once I have received your permission I can then obtain full permission from Walden. If you provide an electronic signature, please include irb@waldenu.edu.

Thank you,

 Kerry Hannah

cc Dr. Stanciu, committee chair

Appendix D: Email to Research Site Potential Participants

From: Kerry Hannah
Date: Wednesday, July 24, 2019 at 09:50
To: ███████████████████████████████████
███████████████

Subject: Delphi Study Competency-Based Education

██ ██████,

I have obtained permission from Walden University's Institutional Review
Board, approval number for this study is 06-18-19-0243191. I am ready to deploy the
questionnaire to your faculty and staff who are involved in the competency-based
education program in your department. As a reminder the questionnaire is 7 questions
and will take approximately 15-30 minutes to complete.

If you could provide me a list of names and email addresses, I will then send the potential
participants the invitation to participate and consent form (see attached).

I look forward to hearing back from you and excited to move forward.

Thank you,

Kerry Hannah

Appendix E: Round 1 Email and Informed Consent

From: Kerry Hannah
Date: Monday, August 5, 2019 at 15:06
Cc: Dorin Stanciu

██████████████████████████████

Subject: A Delphi Study Competency-Based Education Informed Consent

Dear Sir or Madam,

I am a doctoral student at Walden University, and I would like to invite you to take part in a research study about best practices for faculty professional development, support, and training resources in a competency-based education (CBE) method. As someone in higher education who has expert knowledge of best practices in designing, implementing, or teaching in a CBE method you were selected as a possible participant in this study. I am gathering a consensus of expert opinions to determine a list of best practices.

This form is part of a process called "informed consent" to allow you to understand this study before deciding whether to take part.

Background Information:
The purpose of this study is to understand the professional development, support, and training resources that would be needed for higher education institutions intending to implement a CBE method.

Procedures:
If you agree to be in this study, you will be asked to participate in two rounds of questionnaires conducted via Survey Monkey. Each questionnaire will take 15-30 minutes of your time to complete at a time that is convenient for you.

Round 1 Questionnaire: The round 1 is the brainstorming portion of the research. You will be asked to complete a combination of seven (7) open- and closed-ended questions to provide a list of best practices for professional development, support, and training resources in your expert opinion.

Round 2 Questionnaire: In round 2 in a questionnaire you will be provided with a list of data collected from round 1 statements asking you to either agree with the statement or to provide any modifications.

Voluntary Nature of the Study:
This study is voluntary. You are free to accept or turn down the invitation. If you decide to be in the study now, you can still change your mind later. You may stop at any time.

Risks and Benefits of Being in the Study:

Being in this type of study involves some risk of minor discomforts that can be encountered in daily life, such as fatigue or stress. Being in this study would not pose a risk to your safety or well being.

This study's benefits include the potential to contribute to positive social change by aiding higher education institutions and faculty in understanding the needs of faculty professional development, support, and training resources in a CBE method.

Payment: No payment will be provided in exchange for participation in this study.

Privacy:
Reports coming out of this study will not share the identities of individual participants. Details that might identify participants, such as the location of the study, also will not be shared. The researcher will not use your personal information for any purpose outside of this research project. Data will be kept secure by placing password protection on all files and on the computer where the data will be store. Data will be kept for a period of at least 5 years, as required by the university.

Contacts and Questions:
You may ask any questions you have now. Or if you have questions later, you may contact the researcher via 989-386-0240 or kerry.hannah@waldenu.edu. If you want to talk privately about your rights as a participant, you can call the Research Participant Advocate at my university at 612-312-1210. Walden University's approval number for this study is **06-18-19-0243191** and it expires on **June 17th, 2020.**

Please print or save this consent form for your records.

Obtaining Your Consent

If you feel you understand the study well enough to decide, please indicate your consent by replying to this email with the words, "I consent".

Here is the link to complete the survey: ████████████████

Respectfully,

Kerry Hannah
cc. Dr. Stanciu, Committee Chair
cc. ████████

Appendix F: Follow-up Email Round 1

From: Kerry Hannah
Date: Thursday, August 15, 2019 at 1:37 PM
Cc: Dorin Stanciu ██████████████████████████████
Subject: Re: A Delphi Study Competency-Based Education Informed Consent

Dear Sir or Madam,

 I am sending this email as a follow-up to a request sent ten days ago to participate in a doctoral research study. If you have already completed the questionnaire or chosen not to participate, please disregard this email and I thank you for your cooperation and consideration to participate. If you are interested in participating here is the link to complete the survey ██████████████████

Thank you,

 Kerry Hannah

Appendix G: Email Round 2

Round Two Questionnaire: A Delphi Study Competency-Based Education
From: Kerry Hannah
Thu 9/5/2019 2:44 PM
Cc: Dorin Stanciu; ███████████████████████████████

Dear Sir or Madam,

Thank you for continued support in my research study on best practices for faculty professional development, support, and training resources in a competency-based education (CBE) method. In the first round, you and the other participants provided a list of possible best practices for professional development, support, and training resources.

For the round two questionnaire, I am asking for your opinion on certain findings, from round one, regarding the design and implementation of CBE programs and course.

The round two questionnaire will take approximately 10-15 minutes to complete. Here is the link to complete the survey: ███████████████.

Walden University's approval number for this study is 06-18-19-0243191 and it expires on June 17th, 2020.

Respectfully,

Kerry Hannah
cc. Dr. Stanciu, Committee Chair
cc. ███████████

Appendix H: Follow-up Email Round 2

From: Kerry Hannah
Date: Sunday, September 15, 2019 at 1:37 PM
Cc: Dorin Stanciu ███████████████████████████
Subject: Re: Round Two Questionnaire: A Delphi Study Competency-Based Education

Dear Sir or Madam,

 I am sending this email as a follow-up to a request sent ten days ago to participate in a doctoral research study. If you have already completed the questionnaire or chosen not to participate, please disregard this email and I thank you for your cooperation and consideration to participate.

If you are interested in participating the round two questionnaire it will take approximately 10-15 minutes to complete.

Here is the link to complete the survey: ████████████████

Thank you,

 Kerry Hannah

Appendix I: Round 1 Questionnaire

Round One of Two Questionnaire

Thank you for being an expert panelist in this study. This is round one of two and there are seven (7) open- and closed-ended questions taking approximately 15-30 minutes to complete. Your participation is highly appreciated.

1. Describe the professional development, support, and training resources you were given to teach in a competency-based education method (e.g., types of training, length of training received).

2. What skills and knowledge are essential for a faculty member to possess before they teach in a competency-based education method?

3. If you were creating a professional development course to instruct new faculty how to teach competency-based education courses, what elements would be critical to include?

4. What types of ongoing competency-based education professional development would be relevant to help provide training to faculty?

5. In what formats do you prefer professional development to be?

☐ Online

☐ Face-to-face

☐ Blended (partial online and partial face-to-face)

6. Please place a check mark next to the items you feel are essential organizational support areas that should be included to support faculty teaching in the CBE method.

☐ Library   ☐ Media Services

☐ Administrative   ☐ Mentoring

☐ Instructional Design   ☐ Peer Support

☐ Other (please specify)

7. List the training resources you believe you need, or that would benefit other faculty who will be teaching in a competency-based education method (e.g., handbook, informal training, and conferences).

DONE

Appendix J: Round 1 Initial Coding

	Responses							
	Participant 1	Participant 2	Participant 3	Participant 4	Participant 5	Participant 6	Participant 7	Initial Coding
Question 1								
Describe the professional development, support, and training resources you were given to teach in a competency-based education method (e.g., types of training, length of training received).	nothing formal, but I had been part of a 3 year 'blue-sky' brainstorming group that considered what (medical) education could look like if we started from scratch. That did not happen, but the discussions, ideas, and innovations were critical to our development and implementation of the CBE Masters program we currently have.	Nothing specific. I took different courses throughout my educational career.	I was faculty in the Department of Medical Education, so my educational experiences and academic experience provided me with the support and training to participate in CBE. The resources provided were time (salary support) and a cadre of colleagues with expertise in different faucets of CBE.	Have not received any specific training related to my teaching efforts.	I received no specific support or training. I was a participant in a process that had been started by someone else and I was able to contribute based on my experience doing a variety of faculty development and other educational program activities at a local, regional, and national level of medical education.	There are no professional development opportunities, support or resources available at our institution.	I received no specific training in CBE. I did however complete graduate training in higher education where the underlying theory was covered.	No formal training

	Responses							
	Participant 1	Participant 2	Participant 3	Participant 4	Participant 5	Participant 6	Participant 7	Initial Coding
Question 2								
What skills and knowledge are essential for a faculty member to possess before they teach in a competency-based education method?	They need to understand the key principles of CBE and the extent to which their institutional environment will support those principles. Few places are able to accommodate a 'pure' form of CBE, so understanding the compromises is important. Then is needed a solid understanding of how the assessment process links to CBE and how this is often quite different from traditional programs. For the specific course or program, obviously, one needs a clear and consensual statement of the target competencies and what criteria are needed to judge that a given learner IS competent.	subject matter expertise; ability to understand student assessment	Besides the expertise in the domains being taught and assessed, ability to listen to the learners interests/needs and adapt the curriculum to meet their needs. CBE faculty understand their learners' limits and resources, and that the time commitment will probably be greater than a more traditional curriculum.	Competencies need to be identified and agreed upon and linked to successful teaching modalities. Faculty should then be trained in those techniques. They should also have a community of practice formed to help and support their efforts	At some level they should be able to do and teach/role model/mentor a learner in the skills and knowledge expected of a learner in a competency based program.	Our program is not course based so in our unique situation, faculty serve many different roles that are critical to the success of the program. Most of the faculty in our program have an PhD. The critical skills necessary are related to mentoring, assessment and content expert in various areas such as Teaching, Leadership, Scholarship.	I believe it requires a frame shift in the approach to education that changes which outcomes the curriculum is designed around. By using a CBE approach in assessment a natural drive to teach toward practical competency occurs.	Competencies, roles of faculty (mentor), content expert, subject matter expert, curriculum design, assessment, theory of CBE, curriculum is same but different

	Responses							
	Participant 1	Participant 2	Participant 3	Participant 4	Participant 5	Participant 6	Participant 7	Initial Coding
Question 3								
If you were creating a professional development course to instruct new faculty how to teach CBE courses, what elements would be critical to include?	Assessment principles fo CBE - multiple assessment methods and the need to integrate and combine assessment data to make competency decisions. Curriculum design and integration across multiple experiences that all point towards the same competencies The theory of CBE and how it differs from (and is the same as) traditional higher education models.	Backwards Mapping. Difference between evaluation and assessment.	Communication with learners and colleagues, mentoring, resources available, assessing learner knowledge levels and skill levels.	Definitions of the intended outcomes, understanding of educational principles around the differences of knowledge, skills, and attributes, review of best practices in pedagogy, feedback, and evaluation/assessment	I have no experience teaching competency based courses, our model is different in that regard.	Since our program is not course based, I do not have experience outside of our institutions program to provide the critical elements needed. For our program, subject matter experts and assessors are two of the most critical components to our success	I think competency based assessment methods drive the whole thing. Get that right and the rest follows. As for other curriculum design a good understanding of adult learning theory approaches and educator as guide over knowledge disseminator is important.	Assessment principles, data to make competency decisions, curriculum design, theory of CBE, backwards mapping, difference between evalution and assessment, communication, mentoring, intended outcomes, educational principles, best practices of pedagogy, feedback, subject matter expert, adult learning theory.

	Responses							
	Participant 1	Participant 2	Participant 3	Participant 4	Participant 5	Participant 6	Participant 7	Initial Coding
Question 4								
What types of ongoing CBE professional development would be relevant to help provide training to faculty?	We constantly need to train faculty in **assessment and particularly the standards by which we judge competence**. Similarly are the **recognition of the various assessment methods and targets,** which need to be integrated into competency decisions. Faculty also need to be indoctrinated into the **CBE philosophy**. one can't assume that a new faculty member will recognize **(or buy into) the CBE model** and how it **differs from traditional higher education**.	**teaching and learning** in **adult populations.**	Review of available **institutional resources, mentoring techniques, assessment skills and techniques.**	depends on where they are in their **own level of comfort and competency…**	No clue.	If faculty are assessing a student's competence in a specific area, then definitely they would need **expert knowledge in that area.** CBE forces faculty to **switch from a teaching focus to a learning focus** so development to **switch that mindset would be important.**	CBE lends itself to the CME world where practical ability is the goal. Training in procedures, the use of ultrasound, the **adoption of new evidence based practices** seem like low hanging fruit.	assessment standards, assessment methods and targest, CBE philosophy, faculty buy-in, differs from traditional higher education, adult population, resources, mentoring, assessment techniquest, level of comfort with competencies, subject matter expert, switch from teaching focus to learning focus, switch in mindset, new evidence

	Responses							
	Participant 1	Participant 2	Participant 3	Participant 4	Participant 5	Participant 6	Participant 7	Initial Coding
Question 5								
In what formats do you prefer professional development to be delivered (face-to-face, online, blended, synchronous, and asynchronous)?	**Blended** (partial online and partial face-to-face)	Face-to-face	Face-to-face	Online, Face-to-face, **Blended** (partial online and partial face-to-face	Face-to-face	Online	Online, **Blended** (partial online and partial face-to-face)	Blended, Face-to-face, Online

	Responses							
	Participant 1	Participant 2	Participant 3	Participant 4	Participant 5	Participant 6	Participant 7	Initial Coding
Question 6								
Please place a checkmark next to the items you feel are essential organizational support areas you feel should be included to support faculty teaching in the CBE method	Library, Administrative, Mentoring, Assessment design and implementation	Library, administrative, Instructional design, media services, mentoring	Library, administrative, mentoring, **peer support**	Library, administrative, instructional design, mentoring, **peer support**	Library, administrative, instructional design, media services, mentoring, **peer support**	Library, administrative, media services, mentoring, **peer support,** subject matter experts	Library, administrative, instructional design, mentoring, **peer support**	Library, administrative, mentoring, instructional design, media services, peer support, subject matter expert, assessment design and implementation

	Responses							
	Participant 1	Participant 2	Participant 3	Participant 4	Participant 5	Participant 6	Participant 7	Initial Coding
Question 7								
List the training resources you believe you need, or that would benefit other faculty who will be teaching in a CBE method (e.g., handbook, informal training, and conferences).	a **learning community** of other faculty engaged in CBE - either at one's home institution or regionally/nationally. Good **examples of CBE programs** and site visits are also very helpful.	**Handbook** that includes **resources, assessment processes, mentoring suggestions, guidelines/examples,** and graduation requirements. **Annual retreats** to review curriculum, assessment procedures, administrative processes, and enrollment section.	**handbook,** examples of **successful teaching, peer groups** for **support and mentorship**	Being a member of a **community of faculty and staff** working to deliver competency based education.	**informal training, shadowing other faculty,** a **mentor**	A **handbook** with resources to the **relevant theory** with **practical example**s coupled with the opportunity to implement those things in the real world.	**mentor handbook, student handbook**	learning community, examples of CBE, handbook, annual retreats, successful teaching, peer groups, training showdowring, relevant theory, student handbook, mentor handbook

Appendix K: Round 2 Questionnaire

Round Two Questionnaire

Preamble/Info

I kindly ask your opinion on certain aspects/topics regarding the design and implementation of CBE programs and course.

Seven main aspects identified during the previous inquiry of expert's opinions are presented below in a synthesized form.

Each of these seven aspects/topics have, in turn, various components or elements or key traits, components or elements that were derived from the experts' observations.

I kindly ask you now to help in evaluating these seven main topics on two important dimensions. Each dimension will take approximately 10-15 minutes each to complete.

Round Two Questionnaire

Dimensional assessment #1

The first dimension starts here and is explained below:

For each of the seven main topics. you will be presented with a rubric asking you to rank the components/elements/traits in order of their importance, from 1=the least important, to 5=the most important.

Please, respond by placing a tick mark on the same row with the element/component that you are assessing, on the column whose heading indicates the importance you consider adequate for that element/component.

When answering, you might find some of the components (listed in rows) as being of relatively similar importance. If this is the case for you, you can answer by marking the same importance for those 'similarly important' elements/components, but try, nevertheless, to asses if there is any difference.

Please, do NOT think of this ranking as giving each element/component a score from 1 to 5! This is important because an objective measuring in this respect would not be entirely feasible. Rather, please, focus only on ordering each element **(even if some of them may get the same rank).**

1. Please consider the following list of essential skills and knowledge, needed for a faculty member to possess before they teach in a competency-based education method. Please, mark their level of importance.

	1	2	3	4	5
Understand key principles of CBE	○	○	○	○	○
A clear and consensual statement of the target competencies	○	○	○	○	○
Subject matter expertise	○	○	○	○	○
Understanding of student assessment	○	○	○	○	○
Faculty role of a mentor and assessor	○	○	○	○	○
Frame shift in the approach to education that changes curriculum design	○	○	○	○	○

2. Please, consider the situation in which you were creating a professional development course to instruct new faculty how to teach competency-based education courses. Please rank, in order of their importance, the following components/elements.

	1	2	3	4	5
Defining competency frameworks and evidence necessary to judge competence	○	○	○	○	○
Assessment principles of CBE	○	○	○	○	○
Curriculum design	○	○	○	○	○
Theory of CBE and how it differs from traditional higher education models	○	○	○	○	○
Backwards mapping	○	○	○	○	○
Difference between evaluation and assessment	○	○	○	○	○

Adult learning theory	○	○	○	○	○
Best practices in pedagogy, feedback, and evaluation/assessment	○	○	○	○	○

3. Please, consider the following types of ongoing competency-based education professional development that are relevant for providing training to faculty. Please, rank them, in order of their importance.

	1	2	3	4	5
Standards by which competencies are judged	○	○	○	○	○
Various assessment methods and targets	○	○	○	○	○
CBE philosophy	○	○	○	○	○
Teaching and learning in adult populations	○	○	○	○	○
Institutional resources	○	○	○	○	○
Mentoring techniques	○	○	○	○	○
Assessment skills and techniques	○	○	○	○	○
Switch from teaching focus to a learning focus	○	○	○	○	○
New evidence based practices	○	○	○	○	○

4. Please, consider the following different possible formats to provide professional development training's/instruction. Please, rank them, in order of their importance.

	1	2	3	4	5
Blended	○	○	○	○	○
Face-to-face	○	○	○	○	○
Online	○	○	○	○	○

5. Please consider the following relevant organizational support areas that could be included to support faculty teaching in the CBE method. Please, rank them, in order of their importance.

	1	2	3	4	5
Library	○	○	○	○	○
Administrative	○	○	○	○	○
Mentoring	○	○	○	○	○
Instructional Design	○	○	○	○	○
Media Services	○	○	○	○	○
Peer Support	○	○	○	○	○
Assessment Design	○	○	○	○	○
Implementation	○	○	○	○	○

6. Please, review the following list of training resources you believe you need, or that would benefit other faculty who will be teaching in a competency-based education method (e.g., handbook, informal training, and conferences). Please, rank them, in order of their importance.

	1	2	3	4	5
Faculty Handbook	○	○	○	○	○
Student Handbook	○	○	○	○	○
Assessment Process	○	○	○	○	○
Peer Support	○	○	○	○	○
Curriculum Review Process	○	○	○	○	○
Mentoring Handbook	○	○	○	○	○

Round Two Questionnaire

Dimensional assessment #2

The second dimension starts here and is explained below:

During the previous assessment, you were asked to rank the importance of various components of each main topic pertaining to CBE programs.

We are now asking you to consider which of these components can be disregarded and which ones are crucial to be present if a CBE program is to be effective.

Please, answer by placing a mark on the corresponding column, for each of the following topics.

7. skills and knowledge/expertise of faculty.

	Crucial	Not crucial
Understand key principles of CBE	○	○
A clear and consensual statement of the target competencies	○	○
Subject matter expertise	○	○
Understanding of student assessment	○	○
Faculty role of a mentor and assessor	○	○
Frame shift in the approach to education that changes curriculum design	○	○

8. relevant CBE course components.

	Crucial	Not crucial
Defining competency frameworks and evidence necessary to judge competence	○	○
Assessment principles of CBE	○	○
Curriculum design	○	○
Theory of CBE and how it differs from traditional higher education models	○	○
Backwards mapping	○	○
Difference between evaluation and assessment	○	○
Adult learning theory	○	○
Best practices in pedagogy, feedback, and evaluation/assessment	○	○

9. ongoing professional development of faculty.

	Crucial	Not crucial
Standards by which competencies are judged	○	○
Various assessment methods and targets	○	○
CBE philosophy	○	○
Teaching and learning in adult populations	○	○
Institutional resources	○	○
Mentoring techniques	○	○
Assessment skills and techniques	○	○
Switch from teaching focus to a learning focus	○	○
New evidence-based practices	○	○

10. format of the professional development program.

	Crucial	Not crucial
Blended	○	○
Face-to-face	○	○
Online	○	○

11. organizational support for faculty and course.

	Crucial	Not crucial
Library	○	○
Administrative	○	○
Mentoring	○	○
Instructional Design	○	○
Media Services	○	○
Peer Support	○	○
Assessment Design	○	○
Implementation	○	○

12. teaching and instructional resources for faculty.

	Crucial	Not crucial
Faculty Handbook	○	○
Student Handbook	○	○
Assessment Process	○	○
Peer Support	○	○
Curriculum Review Process	○	○
Mentoring Handbook	○	○

13. Which of the following are essential in the design and implementation of a CBE program so that the program can be considered effective (and which ones can be disregarded)?

	Crucial	Not crucial
previous instruction/training of faculty	○	○
skills and knowledge/expertise of faculty	○	○
relevant CBE course components	○	○
ongoing professional development of faculty	○	○
format of the professional development program	○	○
organizational support for faculty and course	○	○
teaching and instructional resources for faculty	○	○

14. Please share any additional thoughts/comments you have on CBE.