

## College Of Education and Human Development Mini-Grant Program

### **Project Title**

The Organizational Impact of Online Technical Education in Michigan

### **Purpose**

With more colleges turning to online education in attempts to increase access and degree completion (Lokken & Mullins, 2014), it is important to determine how colleges are using online education to expand technical education offerings and the resulting organizational impact. For example, President Obama (2009) called for an additional 5 million graduates from community colleges by the year 2020. To help achieve this goal, over \$2 billion is planned to fund community college and industry partnerships through the Trade Adjustment Assistance Community College and Career Training (TAACCCT) program (The White House, 2014). The United States Department of Education (2012) noted that transforming career and technical education is essential in rebuilding our overall educational system and increasing economic prosperity in the country, and it suggested that distance education should be used to increase career and technical education opportunities for rural and remote students. Thus, it makes sense for colleges to implement online courses and online course elements as they attempt to transform technical education. The vast majority of existing literature about online education in community colleges focuses on entry-level general education courses, yet the current emphasis on degree completion highlights technical education.

Online courses and course elements impacts colleges beyond teaching and learning including policies, procedures, and organizational culture (Garza Mitchell, 2009; Garza Mitchell & Cano-Monreal, in press). More information is needed about how online education is being used to provide or enhance technical education and its impact on faculty, students, and the college (Henderson, Fynewever, Petcovic, & Bierema, 2012). The purpose of this study is to examine how online elements are integrated into technical education and the resulting impact on the organization.

### **Background**

Technical education has played a large role in the history of the community college, and its role is taking on even more importance in the current environment. In addition to being viewed as a solution for increasing degree completion, technical education is viewed as a tremendous return on investment for community colleges, states, and industry (e.g., Harrison, et al., 2006; Washington State Workforce and Education Coordinating Board, 2014) and as an economic stimulus. Since the economic downturn in 2008, the emphasis on skilled trades jobs has increased. Jobs that require technical degrees are among of the largest growing in industry (Jepsen, Troske, & Coomes, 2014) and this trend is expected to continue. One recent report indicates that more than 12 million college students are enrolled in career and technical education courses and programs (Association for Career & Technical Education, 2014).

The most recent report by the United States Department of Education (Parsad & Lewis, 2008) found that 97% of community colleges offer online courses,<sup>1</sup> and the majority of undergraduate students taking online courses do so at community colleges. The annual survey of online education by the Instructional Technology Council (ITC) found that online enrollment is the predominant source of enrollment growth in higher education (Lokken & Mullins, 2014). That survey also indicated that 45% of survey respondents increased their number of hybrid offerings between 2012-2013, and 83% increased the number of web-enhanced offerings (Lokken & Mullins, 2014). The continued growth in enrollment and offerings indicates that online education, in various formats, will continue to play an important role for community colleges.

Traditionally, an instructor was solely responsible for his or her course and course material, but online education split the faculty role. Courses became productions that were the result of specialists in the form of instructional designers and multimedia professionals working with faculty, whose role became that of “content expert” (Hanna, 2003). Hence, colleges are forced to examine and, perhaps, alter their views of teaching, learning, and the faculty role when courses are translated to an online format.

The shift toward online technical education, provides challenges for administrators and faculty. Such programs have historically used “hands-on,” apprenticeship style teaching (Pratt, 1998). The very nature of this hands-on tradition makes technical education the most challenging to deliver in an online format due to lab-based components, and apprenticeship models that are time-consuming, challenging to replicate, and require coordination and buy-in from multiple constituents (Horvitz & Zinser, 2011).

A search of the literature revealed five major studies conducted by two groups of researchers about the use of online learning in career and technical education (CTE), which encompasses all fields that prepare students for careers and is also known as occupational education (Benson, et al., 2005, 2008; Johnson, et al., 2003; Githens, et al., 2012, 2014). These studies took a quantitative approach to examine the status and trends in the use of online CTE and environmental factors that influence online CTE offerings. These five studies provide the bulk of empirical information for what we know regarding online technical education in the community college. I intend to enhance this foundational knowledge and explore the impact of online technical education on colleges using an organizational lens. A gap exists in the literature, and I hope to lessen this gap by sharing findings from this research project.

### **Methods and Plan of Work**

This is a qualitative research project. A qualitative approach is appropriate as I am conducting a systematic inquiry into current practice (Merriam, 2009). Integration of online education and online educational components into technical education impacts nearly all elements of a college system including strategy, structure, processes, people, rewards, and culture. In order to determine why certain elements were successful or not successful at a given college, context

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<sup>1</sup> For purposes of this project, we define online, hybrid, and web-enhanced courses using definitions provided by the Instructional Technology Council: online courses are those in which 80% or more of a course is delivered online; hybrid courses are those in which 30-79% of content is delivered online; web-enhanced courses are those which incorporates online elements to facilitate no more than 29% of the class (Lokken & Mullins, 2014).

must be considered. Therefore, in-depth semi-structured interviews and document analysis will be the primary methods of data collection.

Data will be collected through semi-structured interviews and analysis of relevant documents. The participants will be purposefully selected to help best understand how online education has been integrated into technical education (Creswell, 2013). In particular, participants will be selected from Michigan community colleges that offer technical education in online, hybrid, and web-enhanced formats. I selected Michigan because it is one of the lowest achieving states in terms of adults holding associate's degrees or higher (Good & LaPrad, 2013) and because Governor Snyder has emphasized talent development, particularly in high-tech areas, as a driver of economic growth for the state (Snyder, 2011). I am in the process of gathering information from Michigan community college websites to determine which sites provide online or hybrid education. Faculty members who teach those courses will be asked to participate in a one-hour interview, with a possible follow-up interview for clarification. Distance and online education administrators will also be asked to participate in interviews as will appropriate academic administrators such as deans and department chairs. The targeted number of participants is 10-15 total from at least two community colleges with different institutional contexts. Selecting participants from different institutions will provide context for how different organizational types (e.g., urban, rural, suburban, large, medium, small) are impacted. Qualitative studies are not intended to be generalizable (Creswell, 2013), however providing varied contexts will help make findings more applicable to a wider audience.

I will use a semi-structured interview to allow for questions that may help elicit further meaning from participants (Holstein & Gubrium, 1995). The interview protocol will be tested and refined prior to being implemented. I will conduct a sample interview with a community college faculty member who has implemented online education but who is not a part of the study population. The interview protocol will be revised based on feedback from the sample interviewees to ensure questions are appropriate and relevant, and that understanding exists. In addition to interviews, we will gather documents relevant to the study. Participants will be asked to provide relevant artifacts such as program evaluation reports, curriculum documents, and evaluation and assessment results, to assist in better understanding how online technical education impacted the strategy, structure, processes, people, rewards, and culture of the institution. We will develop a document analysis protocol for the project, and a document log will be kept to help organize collected material. The document analysis protocol will also be tested and refined prior to implementation.

Data analysis is ongoing in qualitative research projects and begins during the collection phase (Creswell, 2013). Thus, initial analysis will begin during the interviews. Interviews will be recorded upon receiving permission from participants. Interview recordings will be transcribed and uploaded to Max QDA. Relevant documents will also be stored in Max QDA to help organize, sort, and search for information.

Document analysis will be used to confirm findings from analysis of the interviews and to provide evidence as to how organizational strategy, structure, processes, people, rewards, and culture are impacted by the shift to online technical education. Initial themes for coding the data will be derived from the conceptual framework (strategy, structure, processes, people, rewards,

and culture). These codes will be used to develop themes for analysis. Evidence of strategy includes how colleges approached online education – fully online, hybrid, or course elements to enhance face-to-face instruction of technical courses. Structure refers to the tasks and activities in an organization, its hierarchy and decision-making authority regarding online education (Dechant & Dechant, 2010), such as the roles played by instructional designers, distance education staff, and faculty members. For example, online education may be centralized through an online education office that guides the processes associated with online education or decentralized where individual departments are responsible for developing, managing, and implementing online courses and course elements. Processes refer to the way the work is done for implementing online education such as course development, student registration, training, support, and technology. People encompasses the ways in which faculty and students were impacted by the changes. Rewards refers to items such as salary, bonuses, etc. Culture reviews the “values, beliefs, and attitudes” of the college (Dechant & Dechant, 2010, p. 297). Each transcript and document will be analyzed by a minimum of two researchers, as I intend to invite one to two students as co-researchers on this project.

Rigor in qualitative research is determined through credibility, dependability, and confirmability (Lincoln & Guba, 1985). Credibility for this study will be ensured through the methods of data triangulation, peer debriefing, and member checking. Data triangulation involves collecting data with multiple methods, for this project that will encompass interviews and documents. Dependability means that the research process is consistent and stable across researchers (Toma, 2011). We will ensure dependability through having multiple researchers analyze the data and through discussion about the meaning of the data and themes that arise during analysis. Confirmability is ensured through member checking (i.e., sharing findings with participants to ensure information was interpreted correctly). Each participant in the study will be provided the opportunity to review findings from the study, and participants will be asked for clarification of information, should any be needed.

### **Budget and Justification**

*(omitted)*

*Personnel:* I am requesting funds for one-two student researchers to provide an opportunity for a graduate student to gain research experience and to assist in confirming findings from the study. This may wind up being a field experience for a student in the Educational Leadership Ph.D. program, or it may be an opportunity for a master’s or doctoral student from another program to gain research experience and pursue a line of inquiry relevant to their thesis or dissertation. I plan to advertise for students to work on the project for a total of 100 hours (50 hours each, or 100 hours for one student completing a field experience). The student(s) will act as co-researcher and will actively engage in creation of the interview and document analysis protocols, data collection, analysis, and writing of results for dissemination. This would provide an opportunity for students who do not have an assistantship to enhance their research skills, publication skills, and to learn more about online technical education in community colleges.

*Services:* The amount requested for transcription would cover the cost of transcribing approximately six hour-long interviews. This would help offset the cost of transcription for the total number of interviews anticipated, for which I will seek a grant from the Council for the Study of Community Colleges or other funding sources.

### **Anticipated Outcomes**

This research will result in material that is both practical and theoretical. Results of the study will produce journal articles that will be submitted to research-oriented publications such as *Community College Review*, *Journal of Vocational Education and Training*, and *The Review of Higher Education* in addition to practitioner-oriented publications such as *Community College Enterprise*. In addition, presentations will be proposed to share results at a national level at conferences such as *American Educational Research Association*, *Association for the Study of Higher Education*, and *Council for the Study of Community Colleges*. This study has the potential to provide a line of inquiry for the graduate student who participates, and my intention is that it can provide a field experience for a doctoral students. Findings from this study may also serve as the basis to seek external funding for expansion and continuation of the research.

### **Plans for Continuing Research**

This research aligns with previous research I have conducted on community college online education and research I intend to conduct around the area of online technical education. I have submitted a proposal as PI for a National Science Foundation Advanced Technological Education grant that focuses on a similar line of inquiry, but this project will act as a starting point for that proposed project, if accepted, or for other applications for external funding. This research project aims to take a broad organizational look at the impact of online technical education, and the findings will provide strands of inquiry that can be examined more deeply and will help both enhance both theory and practice around community colleges and online education.

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