

Author: Towner, Ashley M.

Title: *A Study on Wisconsin Secondary Business Teachers' Use of Industry-Based Certifications and Qualifications to Certify Students*

The accompanying research report is submitted to the **University of Wisconsin-Stout, Graduate School** in partial completion of the requirements for the

Graduate Degree/ Major: Master of Science in Career and Technical Education

Research Advisor: Dr. Deanna Schultz

Submission Term/Year: Spring, 2018

Number of Pages: 66

Style Manual Used: American Psychological Association, 6th edition

- I have adhered to the Graduate School Research Guide and have proofread my work.
- I understand that this research report must be officially approved by the Graduate School. **Additionally, by signing and submitting this form, I (the author(s) or copyright owner) grant the University of Wisconsin-Stout the non-exclusive right to reproduce, translate, and/or distribute this submission (including abstract) worldwide in print and electronic format and in any medium, including but not limited to audio or video. If my research includes proprietary information, an agreement has been made between myself, the company, and the University to submit a thesis that meets course-specific learning outcomes and CAN be published. There will be no exceptions to this permission.**
- I attest that the research report is my original work (that any copyrightable materials have been used with the permission of the original authors), and as such, it is automatically protected by the laws, rules, and regulations of the U.S. Copyright Office.
- My research advisor has approved the content and quality of this paper.

STUDENT:

NAME: Ashley Towner

DATE: May 10, 2018

ADVISOR: (Committee Chair if MS Plan A or EdS Thesis or Field Project/Problem):

NAME: Deanna Schultz

DATE: May 10, 2018

This section for MS Plan A Thesis or EdS Thesis/Field Project papers only

Committee members (other than your advisor who is listed in the section above)

1. CMTE MEMBER'S NAME:

DATE:

2. CMTE MEMBER'S NAME:

DATE:

3. CMTE MEMBER'S NAME:

DATE:

This section to be completed by the Graduate School

This final research report has been approved by the Graduate School.

Director, Office of Graduate Studies:

DATE:

Towner, Ashley M. *A Study on Wisconsin Secondary Business Teachers' Use of Industry-Based Certifications and Qualifications to Certify Students*

Abstract

This study sought to identify what industry certifications Wisconsin secondary business educators were using and why and the qualifications acquired by teachers to certify students. The study used a quantitative, descriptive survey in an effort to determine what industry certifications were most prominent in secondary business education programs. Findings revealed that the majority of Wisconsin secondary business teachers were using Microsoft Office Systems (MOS) certification, mostly because of funding and aligning to curriculum, and there was no evidence of required training/qualifications for teachers to certify students. The majority voluntarily certified/taught themselves to be qualified in certifying students. These findings were important in learning what certifications were used in order to improve the alignment of education with industry.

Table of Contents

Abstract2

List of Tables5

Chapter I: Introduction.....6

 Figure 1: Career Clusters Framework.....7

 Statement of the Problem.....8

 Purpose of the Study8

 Significance of the Study9

 Assumptions of the Study9

 Definition of Terms.....9

 Limitations of the Study.....10

 Methodology10

Chapter II: Literature Review11

 Demand for Industry-Based Certifications11

 Federal Policies and Initiatives 13

 State Initiatives/Incentives 15

 Figure 2: Wisconsin’s DPI Incentive Grant Approved Certifications for Business and
 Information Technology Education18

 Use of Industry-Based Certifications in CTE18

 Industry-Based Certifications in Business Education..... 21

 Situational Learning Theory24

 Qualifications of CTE Teachers to Certify Students25

 Requirements of CTE Teachers to Certify Students..... 26

	4
Professional Development	26
Summary	27
Chapter III: Methodology	29
Design of the Study.....	29
Subject Selection.....	30
Instrumentation	30
Data Collection Procedures.....	31
Data Analysis	31
Limitations	32
Chapter IV: Results.....	33
Demographic Data	33
Research Question 1: What Industry Certifications Are Wisconsin Business Teachers Using With Students and Why?	38
Research Question 2: What Are Wisconsin Business Teachers Doing to Make Sure They Are Qualified to Certify Students?	42
Chapter V: Discussion, Conclusion and Recommendation	44
Discussion.....	45
Conclusion	50
Recommendations.....	51
References.....	53
Appendix A: Survey Questionnaire	60
Appendix B: Consent Form	65

List of Tables

Table 1: Teachers Responding and Those Using Industry Certifications by Region	35
Table 2: Respondents and Industry Certifications Based on Average Size of Graduating Class..	35
Table 3: Years of Teaching and Use of Industry Certifications	36
Table 4: Teacher Training and Use of Industry Certifications	37
Table 5: Age and Use of Industry Certifications	38
Table 6: Industry-based Certifications Respondents were Using	39
Table 7: Reasons Why Respondents Chose the Identified Industry-Based Certification (n=26)	
Respondents Wrote in More than One Course	40
Table 8: Courses Respondents Were Teaching (n=26) Respondents Wrote in More Than One	
Course	41
Table 9: Qualifications/Training Required for Respondent to Certify Students (n=26)	
Respondents Wrote in More Than One Qualification	42
Table 10: Training/Qualifications Respondents Obtained to Certify Students (n=26) Respondents	
Wrote in More Than One Qualification.....	43

Chapter I: Introduction

Business education is under the “Career and Technical Education” (CTE) umbrella. According to the National Business Education Association (NBEA, 2018) standards, “business teachers introduce students to the basics of personal finance, the decision-making techniques needed to be wise consumers, the economic principles of an increasingly international marketplace, and the processes by which businesses operate” (para. 1). In Wisconsin, business teachers are responsible for making the decisions on developing and nurturing a comprehensive business program (Wisconsin DPI, 2017). Each business program typically decides locally which courses and curriculum to offer their students. These decisions are influenced by the standards and needs of education, legislation, industry, and students. Teachers also maintain qualifications to teach industry-driven skills, technology, and competencies.

In addition to educational standards, business teachers pay attention to government leader proposals and comply with legislative changes that are set in place to provide a strong American workforce (U.S. Department of Education, 2014). Global competition is on the rise with technological advances, skill development, high-tech manufacturing, and production. The nation’s attention is on the global effects of a highly skilled workforce and the need to ensure students and workers are receiving the required education and training to meet the demands of a thriving economy (U.S. Department of Education, 2014). Therefore, legislative orders have been put in place to support accountability provisions for students to learn these needed skills.

Across the 50 states, within the implementation of the 1998 Workforce Innovation and Opportunity Act (WIOA), the 2006 Carl D. Perkins Vocational and Technical Education Act (Perkins IV), and the 2015 Every Student Succeeds Act, CTE has seen vast policy action with the intention to increase the number of skilled workers trained to fill the labor market shortages

in high-need occupations (Education Commission of the States [ECS], 2014). In 2015 more than 125 CTE-related laws and executive orders were approved across 39 states (ECS, 2014).

Recently there has been a strong legislative push for developing programs of study (POS) in CTE curriculum to align high school and postsecondary education with industry demands (U.S. Congress, 2006).

- Agriculture, Food, and Natural Resources
- Architecture and Construction
- Arts, A/V Technology and Communications
- Business Management and Administration
- Education & Training
- Finance
- Government and Public Administration
- Health Science
- Hospitality & Tourism
- Human Services
- Information Technology
- Law, Public Safety, Corrections and Security
- Manufacturing
- Marketing
- Science, Technology, Engineering and Mathematics
- Transportation, Distribution and Logistics

Figure 1. Career Clusters Framework. Source: Advance CTE, 2018, Career.

The Career Clusters Framework that qualifies for Perkins federal funding toward CTE programs identifies 16 career clusters (Figure 1). There are almost 100 specific occupational programs included within the 16 career clusters. With the flexibility CTE teachers have in developing their program's coursework, it is difficult to assess skills across all states (NRCCTE, 2010). Industry-based certifications have been identified as an effective tool for this challenge (Manufacturing Institute, 2013). However, there is a plethora of industry-developed assessments to choose from. The options range from local to national, from proprietary to general industry representation, and from broad skills to narrowed skills. There seems to be a need for credible

information on industry standards and consistent materials and content for teachers to not only be able to effectively meet industry and educational standards, but also measure and report their student achievement in these standards. In addition, educators may need support and professional development to identify what industry skills and assessments to include in their curriculum.

Statement of the Problem

Wisconsin CTE educators are responsible for creating programs that will prepare students to enter the workforce knowing business practices and be able to perform certain workplace skills (or on a path to learn). There is a legislative push at the federal and state level for CTE programs to use technical skills assessments, or industry-based credentials, to create consistency and assurance in the skills being developed. Wisconsin business teachers are responsible for developing their program, revising their curriculum at a local level, and for ensuring they are meeting the most current educational and industrial standards. However, there is little information on how Wisconsin business teachers are using industry-based credentials in their program. There is a need for information regarding the decisions Wisconsin business teachers are making about what industry certifications to use in their program, as well as what they are doing to make sure they are qualified to certify students.

Purpose of the Study

The purpose of this study was to uncover the use of industry certifications in Wisconsin business education curriculum and what teachers were doing to remain qualified to certify students in industry certifications. The following research questions guided this study:

1. What industry certifications are Wisconsin business teachers using with students and why?
2. What are Wisconsin business teachers doing to make sure they are qualified to certify

students?

Significance of the Study

The significance of this study is in determining what industry certifications are most prominent in secondary business education programs so that postsecondary programs and business/industry know what is being used, supporting alignment of education and industry needs. Knowing what training teachers are obtaining could also identify potential gaps in training that could be addressed by postsecondary education institutions or businesses that offer the certifications.

Assumptions of the Study

The study was based on the following assumptions:

1. Wisconsin business educators will respond to the request to participate in this study and provide honest responses.
2. Wisconsin business teachers have learned about industry certifications in their training.
3. Wisconsin business teachers participating in this study had adequate background knowledge to respond to the statements on the questionnaire in an informed and accurate manner.

Definition of Terms

The following terms were used operationally throughout this study:

Industry certification. “Indicates mastery of or competency in specific knowledge, skills or processes that can be measured against a set of accepted standards. These are not tied to a specific educational program, but are typically awarded through assessment and validation of

skills in cooperation with a business, trade association, or other industry group” (ACTE, 2018, para. 3).

Industry credentials. The U.S. Department of Labor defined an education and work-related credential as “a verification of an individual’s qualification or competencies issued by a third party with the relevant authority to issue such credentials” (Association for Career and Technical Education [ACTE], 2018, para. 1).

Limitations of the Study

This study has the following limitations:

1. This study is limited to secondary business programs in Wisconsin and findings may not apply to other states or postsecondary business education.
2. Resources and activities are business education focused and may not apply to other CTE programs.
3. Data is collected from teacher reports, not objective observations of program evaluations.

Methodology

A quantitative, descriptive survey was used to complete this research. The population involved in this study was Wisconsin high school business teachers. The sample drawn from the population were high school business teachers who were included in the Wisconsin DPI Business & IT Education Google Hangout Community. Wisconsin high school business teachers were invited to take a 12-question survey to identify what industry certifications they are using and why and what training/qualifications they obtained to certify students. A link to an anonymous digital survey with a description of the study was posted to the Wisconsin DPI Business & IT Education Google Hangout Community.

Chapter II: Literature Review

The 21st-century workforce needs are changing and businesses are being challenged with a skills gap. This economic demand is changing the expectations of what CTE programs should provide for students and businesses. The nation is responding by developing new forms of accountability systems and credentialing for students. This study focused on the use of industry-based certifications within CTE and the qualifications of the teachers to certify students. This chapter will discuss the demand for industry certifications, national and state initiatives for obtaining industry certifications, theory that supports the use of industry certifications, industry certifications in business education, and professional development for Wisconsin business teachers.

Demand for Industry-Based Certifications

Industry-based certifications are an alternative or supplement to traditional credentials and are increasingly becoming an essential component of CTE (Goodman, Meyer, & Imperatore, 2014). The certification assessments are designed either by the industry or business, or by a third party and are intended to show student mastery in proficiencies needed in a particular industry, locally or nationally. They focus on preparing students for employment or program of study (POS), and addressing skills in high need occupations (Goodman, Meyer, & Imperatore, 2014). As the relevancy of technical knowledge and skills needed in the workplace shift at a rapid pace, the focus of stakeholders turns to the support of education and use of credentials (Lualhati, 2006). Embedding industry certifications within CTE programs is intended to provide accountability and consistency in program curriculum development and student learning (Goodman, Meyer, & Imperatore, 2014). Providing options for students could also increase schools' ability to engage more students and tailor their programs to meet the needs of their

students and community (Colorado Department of Education, 2015)

The Manufacturing Institute conducted a survey in 2011 on the impact of the skills shortage in manufacturing. The respondents reported that their biggest need was finding highly skilled workers (Morrison, Maciejewski, & Giffi, 2011); according to the survey, three-quarters of the respondents indicated that “workforce shortages or skills deficiencies in skilled production roles are having a significant impact on their ability to expand operations or improve productivity” (p. 1). Another survey conducted by the Manufacturing Institute studied the value of a credentialed workforce in manufacturing. It was reported that 90% of responding employers perceived certifications as positively making a difference in validating the skills and competencies in both selection of new hires and staff professional development (Manufacturing Institute, 2013). However, they reported not knowing how to measure the impact. They also reported that they didn’t receive many applicants who had a certification.

Information technology (IT) is another field where certifications have an influence on employer hiring decisions. For example, Microsoft is a certification used in business and IT education. According to research found on Microsoft’s website, a 2015 study provided by Foote Partners on IT skills and certifications showed:

- Seventy-two percent of employers use IT certification as a requirement for certain jobs.
- Sixty-six percent of employers see IT certification as very valuable—a dramatic, 30 percent increase since 2011.
- Ninety-one percent of hiring managers consider certification as part of their hiring criteria. (Microsoft, 2018, Students, para. #6).

Although the use of industry-based credentials is growing, there is still limited

communication between education and industry and limited data sharing between certifying organizations and education (McClelland & Gardner, 2018). The need for skilled workers is prevalent, building an increasing demand for information on the impact that certifications have on employers and students to ensure the right tools are being used to develop high-skilled workers necessary to compete in a global economy (ECS, 2014). As a result, there have recently been several federal and state policy actions put in place to incentivize CTE programs to align with industry standards and provide accountability systems (ECS, 2014).

Federal policies and initiatives. According to the leading CTE professional organizations, there was a significant expansion of policy action in 2017 where 49 states enacted 241 “CTE-related laws, executive orders, boards of education actions and budget provisions” (Advance CTE, 2018, State, p. #2). Of these 241 policy activities, the second highest policy category was data reporting and accountability (42 states). The third highest policy category was industry-recognized credentials (39 states) (Advance CTE, 2018, State).

Two big influences driving industry certifications are the Carl Perkins Career and Technical Education Improvement Act (Perkins IV) and The Every Student Succeeds Act. These initiatives specify that CTE programs include in their course designs a focus for College and Career Readiness and offer Programs of Study (POS) or a sequence of courses that lead to industry certifications, postsecondary certificates, and other alternative credentials outside of the traditional degrees to enhance student’s workplace skills (Goodman, Meyer, & Imperatore, 2014). This push for alternative credentials pathways could be in response to the declining college graduation rate in America. A recent study by the National Student Clearinghouse on the graduation rate of students enrolled in U.S colleges in 2009 showed a declining rate of only 52.9% of students completing a degree within six years, leaving almost half without degrees

(NSC Research Center, 2015). This could indicate a gap in the education system requiring alternative routes for students to validate their workplace knowledge and skills.

Federal Perkins funding is an incentive for CTE teachers to use for professional development and purchase relevant technology and materials to build programs evolving with industry standards (U.S. Department of Education, 2014). According to the final report of the National Assessment of Career and Technical Education, several CTE program directors noted Perkins funding as their only resource to make these needed updates (Advance CTE, 2018. State). Perkins IV requires each local recipient of Perkins funding to offer one or more POS that address four core elements identified in the statute. Specifically, POS:

1. Must incorporate secondary and postsecondary education elements;
2. Must include coherent and rigorous content aligned with challenging academic standards and relevant career and technical content in a coordinated, non-duplicative progression of courses that align secondary education with postsecondary education to adequately prepare students for success in postsecondary education;
3. May offer the opportunity for high school students to participate in dual or concurrent enrollment programs or other ways to acquire postsecondary education credits; and
4. Must lead to an industry-recognized credential or certificate at the postsecondary level or an associate's or bachelor's degree (U.S. Congress, 2006).

The Perkins IV legislation requests documentation of student's academic and technical skills, including reports of CTE concentrators who pass technical skill assessments aligned with industry-recognized standards; Perkins IV provides the flexibility of choosing their own measures and how they define their performance indicators (U.S. Department of Education, 2014). The Assessment of CTE shows that 43 secondary CTE directors used national or state

assessments to indicate students attainment of technical skills, where five used industry-recognized credential or certificates (U.S. Department of Education, 2014). This number could be low for several reasons: 1) the industry-recognized assessment date was after reporting is due to Perkins in December, 2) cost as a barrier to offering state-wide technical skill assessments, and 3) issues with collecting data from licensing and certification organizations for privacy reasons (U.S. Department of Education, 2014). States have found challenges in establishing a structure for testing management, tracking student progress, and data reporting to meet these Perkins requirements (Goodman, Meyer, & Imperatore, 2014). An NRCCTE survey showed that “stakeholders would prefer a national system that assesses skills at the occupational-specific level using industry-based standards and assessment protocols” (NRCCTE, 2010, para 2). This supports the need for an assessment structure for CTE educators such as industry certifications assessments.

State initiatives/incentives. The U.S. education policy is structured where the federal government plays a small role in policy decisions. Most education policies are made at the state level (McClelland & Gardner, 2018). In 2015, 12 states addressed policy in the area of industry-recognized credentials (Advance CTE, 2016). As of 2016, 11 states included the percentage of students earning industry-recognized credentials in their accountability systems to measure career readiness (Achieve & Advance, 2016). States such as Indiana, Florida, and Alabama have created governing boards with industry membership to create a feedback loop from business and industry to local CTE programs (ECS, 2014). These boards make oversee program development, funding allocations, and industry certifications or business partnerships in the region’s CTE programs. States such as North Carolina have responded with local school administrative units

collecting data from local industries, employers, and workforce development boards to identify industry certifications that best meet state and local workforce needs (ECS, 2014).

In addition, a number of states have recently provided incentives and innovative solutions to better align curriculum with local industry needs (McClelland & Gardner, 2018). Many states are using incentives to increase the use of industry certifications. States such as Virginia and Florida have recently included industry certifications as a way for students to earn weighted grades, credits toward graduation, and articulation leading to college credit. In Florida, these types of incentives increased the number of certifications by more than 500 percent after the first year (Goodman, Meyer, & Imperatore, 2014).

Other states are incentivizing the completion of industry certifications with funding (ECS, 2014). Florida, for example, passed the Florida Career and Professional Education (CAPE) Act in 2013 to support the state's workforce needs and improve academics through industry certifications. Since CAPE started, the number of high school students who earned these credentials grew from 954 in 2007-2008 to 61,568 in 2012-2013 and has resulted in millions of dollars in state funding; additionally, teachers in Florida can earn up to \$2,000 in additional compensation when their students earn industry certifications (Goodman, Meyer, & Imperatore, 2014). In December, 2013, Wisconsin passed legislation Act 9, or Wisconsin Fast Forward (WFF), designed to invest \$35.4 million in support training and collaborative projects among school districts, technical colleges, and businesses (Wisconsin Department of Workforce Development [DWD], 2016). Within this program is the CTE Incentive Grant program, which supports Wisconsin public school CTE programs participating in industry-recognized certifications. Wisconsin DPI provides a list of approved certifications for which school districts can receive incentive grant funds (Figure 2). The DWD and DPI staffs revise the certificates

listed for national and state certifications for Business and Information Technology at least bi-annually to find those that are accessible, in high-demand occupations, recognized by industry, current, and prepare students for labor market needs. School districts receive funding up to \$1,000 per student who earned an approved industry-recognized certification.

Certification Category Content Area	Certification Entity	Specific Certification	Documentation Required
Business and Information Technology	Adobe	<ul style="list-style-type: none"> • Adobe Certified Associate (ACA) • Dreamweaver • Flash • Illustrator • InDesign • Photoshop • Premier Pro 	Copy of Certificate
Business and Information Technology	Apple	<ul style="list-style-type: none"> • Certified Associate- Mac Management • Certified Associate- Mac Integration • Certified Support Professional (ACSP) • Certified Mac Technician (ACMT) • Apple Certified Pro – any TWO certificates 	
Business and Information Technology	Autodesk Certified User	<ul style="list-style-type: none"> • Autodesk AutoCAD • Autodesk Inventor- Imperial or Metric • Autodesk REVIT- Imperial or Metric • Autodesk Maya • Autodesk 3dsMax • Autodesk Fusion 360 	
Business and Information Technology	Center for Financial Training through ABA (American Banking Association)	<ul style="list-style-type: none"> • Bank Teller • Customer Service Representative 	
Business and Information Technology	CISCO	<ul style="list-style-type: none"> • IT Essentials • Cisco Certified Entry Networking Technician (CCENT) • Cisco Certified Network Associate (CCNA) – Any specialty 	
Business and Information Technology	Comp TIA	<ul style="list-style-type: none"> • A+ 	
Business and Information Technology	CIW	<ul style="list-style-type: none"> • Web Foundations Associate 	
Business and Information Technology	Certiport	<ul style="list-style-type: none"> • Internet Care Computing (IC3) • MS- Office Specialist (MOS) – any TWO certifications • Adobe Certified Associate (ACA) • AutoDesk Certified User • QuickBooks Certified User • Linus Essentials 	
Business and Information Technology	Intuit	<ul style="list-style-type: none"> • QuickBooks Certified User 	
Business and Information Technology	Linux Professional Institute (LPI)	<ul style="list-style-type: none"> • Linux Essentials 	
Business and Information Technology	Microsoft (MS)	<ul style="list-style-type: none"> • MS- Technology Associate (MTA) • MS- Office Specialist (MOS) – any TWO certifications 	
Business and Information Technology	Oracle	<ul style="list-style-type: none"> • Certified Junior Associate or Higher 	

Figure 2. Wisconsin’s DPI incentive grant approved certifications for business and information technology education. Source: WI DPI, 2018, CTE.

Use of Industry-Based Certifications in CTE

Industry certifications are a means for CTE educators to have access to standards and

define the technical knowledge and skills relevant to industries (Lualhati, 2006). Industry certifications can be another assessment tool for CTE educators to improve instruction, maintain relevancy, and meet accountability requirements (Wilcox, 2006). There are multiple choices for industry certifications and how CTE programs can use certifications in their curriculum. It is important that CTE educators use certifications that are valid and worth the effort of embedding into their program (Wilcox, 2006). Different categories of certifications may be more appropriate for different levels of education (Randall & Zirkle, 2005). For example, job or vendor-specific certifications may benefit post-secondary students more because they present current technology skills and marketability in their pursued career pathway whereas secondary students may benefit more with certifications that focus on foundational concepts so they can be transferrable through the process of identifying a career pathway (Randall & Zirkle, 2005). In addition, some certifications require hours of experience that high school students can't obtain (Stone & Stringfield, 2005).

One option for CTE programs in assessing the foundational skills of all career clusters is the Workplace Readiness Certificate. Students who pass this general certification assessment:

Qualify for the SkillsUSA Workplace Readiness Certificate, which is endorsed by 36 well-known companies, among them Toyota and Cisco Systems. Such endorsements may add value to a certificate that students present to either potential employers or postsecondary institutions. (Foster & Pritz, 2006, p. 18)

Other options include certifications in focused career clusters, specific competences such as safety, and specific industries (Foster & Pritz, 2006). Examples of industry certifications in CTE include: The Certified Nurse Aide (CNA), American Welding Society (AWS) certifications, Occupational Safety and Health Administration (OSHA) Certification, ServSafe

Certification, and Computing Technology Industry Association (CompTIA) certifications. Certifications in health occupations typically requires a set number of applied hours and has limitations with the responsibility of protecting students' health and safety (Stone & Stringfield, 2005). The American Welding Society is offered to anyone with the skills to weld, no instructor or number of hours required. IT certifications seem to fit well into secondary business education because they require minimum hours of experience to take the exam (Stone & Stringfield, 2005). However, IT certification programs can be difficult to offer in high school because the time/courses required is challenged by graduation requirements and other extracurricular activities.

Research is lacking if not non-existent for how CTE teachers are choosing and using specific certifications in their curriculum as well as the impact of industry certifications on student achievement. States are attempting to track student progress in connection with industry credentials. However, there are privacy issues with states' ability to access data from third party certification organizations in regards to participant's employment and earnings. In addressing the requirements of Perkins IV, knowing the quality and value of certifications for students is important. From 2012 – 2017, ACTE (2017) put together the "Certification Data Exchange Project" to "improve the data exchanged between industry certification organizations and state data systems" (ACTE, 2017, para. 1). For this project, CompTIA cooperated with the Illinois community college system in exchanging data and ACTE created templates and processes to help other states create a data exchange between education and industry certification organizations. This project also intended to raise awareness and gain consensus from stakeholders that there is a need for this data sharing (ACTE, 2017). This initiative should bring more information and research in the near future regarding the value of industry certifications.

Industry-based certifications in business education. Business education has a long history of performance assessments and certifications. In 1910, the State University of New York's education department put out a report. Under the "Commercial Subjects" section, the report discussed the strong growth of commercial subjects and departments developing in high schools, including subjects in bookkeeping, business writing, and commercial law and arithmetic (New York State Education Department, 1910). This report introduced the opportunity for students in high school to receive certificates, replacing the need for specific business diplomas in postsecondary education. High school students were required to put in the required classroom time, or high school diploma credits, and pass the Department exams.

The certificate examinations included the subjects of "advanced bookkeeping and office practice, commercial arithmetic, commercial law, commercial geography, commercial English and correspondence, and business writing" (New York State Education Department, 1910, p. 333). The examinations included performance-based assessments such as accounting journal entries, writing speed tests, writing business letters and advertisements, and shorthand/typewriter speed tests. Though the report noted shorthand and typewriting certifications were encouraged only to students pursuing that line of work, the National Museum of American History showcases a "Gregg Shorthand Speed Certificate" given in 1944 (National Museum of American History, 2018). Shorthand was a valuable record keeping skill for businesses at that time (New York State Education Department, 1910).

The evolution of technology in business from typewriters to personal computers increased the importance of computer literacy and computer applications in business education and has led to the addition of IT in business education. As word processing became the efficient way of handling paperwork in businesses in the 1970's, the need for employees with computer/IT

skills and training became a factor for business and education (Kennedy, 1978). In the 1980s, IBM/Microsoft and Apple were the first and largest computer operating systems and software leaders in the world for both business and personal use (Rappaport & Halevi, 1991). At the same time, the use of computers in education increased to where almost all students had access to a computer (Boe, 1989).

In the early 1990s, with the launch of Microsoft Office 1.0, Microsoft offered its first certification exam, “exam 001 – Introduction to MS-DOS & Microcomputer Hardware” with many additional exams since. Microsoft Office has continued to evolve and impact organizations’ productivity across the world (Microsoft, 2015). In addition, Microsoft has established itself as a resource for business educators. Programs such as Microsoft Imagine Academy and Microsoft Office 365 Education provide tools, training, curriculum, and Microsoft products and promotions that are organized for students and educators to earn Microsoft certifications (Microsoft Education, 2018).

Apple has also established a place in education, business, and personal use. Apple began alongside Microsoft in the 1980s. Apple, however, didn’t gain as much market share because its software was compatible with few computers besides its own (Rappaport & Halevi, 1991). Apple Education also provides tools and curriculum specifically for teachers and education.

Google is also trending in education technology. A market analysis by Futuresource Consulting (2018) shows that Google has 59.6% share of mobile computing devices shipped to k-12 institutions in the U.S, Microsoft has 25.6%, while Apple iOS has 10.6% (Statista, 2018). To save money, school districts began moving from Microsoft software to Google Apps and to low-cost devices like Google Chromebooks (Singer, 2017). Google provides a certification for educators to be “Google Certified” as well as certifications such as IT professionals certification,

AdWords certification, and Google Developers certification.

Though trends are shifting in education technology, a study performed by the International Data Corporation (IDC) examined almost 80 percent of all job postings in 2015 and showed that proficiency in Microsoft Office ranked number 4 in the top 20 most required skills, including soft skills, indicating Microsoft is still very relevant to business (Anderson & Gantz, 2016).

Cisco certifications are more vendor-neutral and applied to other IT brands. For example, “Cisco Certified Network Associate (CCNA)” validates general technical skills to troubleshoot small networks (Computer Science, 2018). Certiport brings to market industry-leading certifications in Adobe, Microsoft, Autodesk, Intuit QuickBooks, IC3 Digital Literacy, Linux, and Entrepreneurship and Small Business (Certiport, 2018). These certifications align well with business education curriculum. Certifications are also provided by professional associations such as “Computing Technology Industry Association (CompTIA)”, or “Center for Financial Training through American Banking Association (ABA)” (Computer Science, 2018). CompTIA has developed IT training and certification programs since the 1980’s, and as of 2005 it was the biggest certification provider to offer vendor-neutral IT certification exams for computer service/network careers (Stone & Stringfield, 2005).

Business education is one of two national career clusters that have some core assessments that can lead to a certificate. The MarkEd organization and DECA association joined together to begin assessments offered online for core business and marketing concepts, available through the A*S*K Institute (Foster & Pritz, 2006). These certifications include concepts for “business principles, entrepreneurship/management, finance, and marketing” (ASKInstitute, 2018, para. 1).

Industry certifications clearly have a place in high school business education. They can

be useful tools in providing students with opportunities to apply workplace skills while providing business education programs a means to meet the accountability requirements set forth by legislation. The Wisconsin DPI provides a list of incentive grant approved certifications for Business and Information Technology that could help guide teachers in choosing certifications that prove useful to the state's workforce.

Situational Learning Theory

Situated learning theory is one theory of instruction for individuals to learn professional or technical skills. This theory was originated by Jean Lave and Etienne Wenger in the early 1990's. The theory supports that learning of skills is obtained through experiencing and practicing the new skill in the particular context in which it occurs (Lave & Wenger, 1991). This concept is intended to help teachers relate curriculum content to real-world situations and motivate students to make connections between what they are learning in the classroom and its application to their lives (Berns & Erickson, 2001). Situated learning includes approaches such as "problem-based learning, cooperative learning, project-based learning, service learning, and work-based learning" (Berns & Erickson, 2001, p. 1).

Situated learning theory plays a prominent role in CTE. An essential role of CTE is "to facilitate construction of knowledge through experiential, contextual, and social methods in real-world environments" (Lynch, 1997, p. 27). Elements of situated learning have been developed in CTE through many programs such as school-to-work, career and technical student organizations, co-op, apprenticeships, career academies, Tech Prep, dual enrollment, and industry credentials (Evers, 2015). These programs provide real-world environments where students apply the skills and competencies learned in the coursework (Brand, Valent, & Browning, 2013). Industry certifications specifically provide students the opportunity to learn, apply, and assess knowledge

and skills in the context of industry experience.

The conventional school system has been criticized for separating learning and use (Brown, Collins & Duguid, 1989). Although students are shown the conceptual tools to use in the real-world, such as text book definitions and math formulas, they are not exposed to using the tools in authentic activity. The way students are learning math formulas to pass standardized or end of chapter tests is different than how math formulas are used in the real-world, such as in a practitioner's office (Brown, Collins & Duguid, 1989). The scientific measurement of student learning through standardized tests designed for all students is challenged by situated learning theory's research showing that learning of skills comes from the individual's experience of the skill in context and involves self- monitoring and recognition about when and how to use the skill. Additionally, situated learning theory finds that proficiency develops in a field of study where assessments are based on real-world problems and a specific skill set is learned versus an accumulation of information (Shepard, 2000).

CTE's role of providing situated learning for students is prominent through its career cluster/POS curriculum framework and programs that focus on applying specific industry-driven skill sets. Business education specifically has national standards designed to measure learning of skills through performance and applied learning (NBEA, 2018). Industry certifications can be used to provide students with opportunities to apply industry-specific workplace skills and offer another way to measure student learning.

Qualifications of CTE Teachers to Certify Students

Wisconsin CTE teacher preparation programs include institutions of higher education which offer 4-year degree programs, alternative route programs, and converting licenses from other disciplines (Wisconsin Department of Public Instruction [WI DPI], 2018, Pathways). It

seems important to note that Wisconsin provided alternative licensure programs in 2016 only for educational areas in high need of teachers. CTE is considered a shortage/high-need area in Wisconsin. Wisconsin also provides experience-based licensure to teach technical or vocational education, designed for individuals with training/experience in the field (WI DPI, 2018, Pathways).

Requirements of CTE teachers to certify students. After studying each of the listed certifications approved for Wisconsin business and information technology programs, there was very little information in terms of requirements or qualifications needed for teachers to certify students. The only requirement found was that Certiport requires the school/organization to be a Certiport testing center and the teachers be registered as a proctor to administer the exams (Certiport, 2018). This requires teachers and schools to simply create a user account and “accept” the Certiport Center Agreement and Proctor Agreement. There were no studies found on whether teachers do or do not need certifications in order to certify students. However, other state CTE programs have encouraged or required CTE teachers to become trained/certified in the industry credential to expand their competency in the skill sets and job roles for which they train/certify students (North Carolina DPI, 2018). Additionally, industry certifications could support CTE teachers in explaining the requirements of specific jobs in related POS.

Professional development. Wisconsin business teachers have a variety of professional development opportunities they can attend. One of the biggest for the state is the spring and fall Business, Marketing, and Information Technology Updates events at UW-Stout and UW-Whitewater (WI DPI, 2018, Business). Business teachers also have the opportunity to participate in professional associations at the local, state, and national levels, such as Future Business Leaders of America, Wisconsin Business Education Association, National Business Education

Association, Association of Career and Technical Education, Wisconsin Association of Colleges for Teacher Education, and relevant industry groups. Professional development could also include job shadows, externships, taking related courses, staff development, online resources, and self-reflection (WI DPI, 2018, Business). In some schools, these activities are more informal, and others are well supported by their district (Stipanovic, Shumer, & Stringfield, 2012).

Some of the certification programs have created a curriculum for teachers to help integrate the competencies into the program curriculum and prepare students for certification. Most provide study and practice materials and learning coursework materials to help both the educator and students learn the key elements of the certification. Microsoft and Google provide certifications specifically for educators.

Summary

In conclusion, it seems as though CTE is thought to play an important role in developing a competitive workforce and preparing students for college and careers. Although it looks like CTE programs have been designed with this focus for decades, recent federal and state initiatives to create “high quality” CTE programs are currently focusing on creating effective, common, and sustainable POS frameworks and assessments, and methods such as industry certifications to document and prove students are learning the industry demanded skills. These initiatives create a need to look at how business education programs are designed to align standards between secondary and postsecondary/industry to prepare students with the skills and knowledge that will help Wisconsin businesses fill the needs of industry. Industry certifications have been identified as a way to link these standards and prove student learning, and they seem to be widely used in CTE and have a long history in business education. However, the variety of choices could make it difficult to choose what certifications to use. Though there was no evidence of required

training for teachers to certify students, teachers certifying themselves could expand their knowledge and ability to certify students and understand industry needs.

Chapter III: Methodology

There has been a legislative push at the federal and state level for CTE programs to use technical skills assessments, or industry-based credentials, to create consistency and assurance in the skills being developed. Given the varying industry and educational demands and the flexibility business teachers have in developing their curriculum, it is unclear how secondary business education teachers are making decisions about which industry certifications to focus on when designing their business program and course offerings, as well as what they are doing to obtain qualifications to certify students. The purpose of this study was to gather data from Wisconsin secondary business teachers about their training and use of industry-based certifications (IBCs) within their program.

This study attempted to answer the following research questions:

1. What industry certifications are Wisconsin secondary business teachers using with students and why?
2. What are Wisconsin secondary business teachers doing to make sure they are qualified to certify students?

The methods, participant sample, instrumentation, and procedures used in the study of business education program certifications are explained in this chapter. This chapter will conclude with a description of the limitations of the study.

Design of the Study

The study was descriptive and designed to primarily research quantitative data in identifying patterns or trends in Wisconsin secondary business teachers' use of industry certifications and the qualifications required to certify students. A survey methodology was used to reach the large and widely spread population of Wisconsin secondary business teachers

relatively quickly. An online survey was chosen because there was no need to identify respondents and the data could be obtained by brief answers to structured questions.

Additionally, the researcher is a member of the participating community consisting of educational professionals and colleagues, supporting an adequate response rate and reliable information.

Subject Selection

The population involved in this study was Wisconsin high school business teachers, male and female of various ethnicities. The sample drawn from the population was business teachers who are included in the Wisconsin DPI Business & IT Education Google Hangout Community which, at the time of the survey, included 762 members. The secondary business education teachers have learned about certifications in their training and can choose to use industry-based certifications in their programs. There is regular sharing of materials and resources through this community.

Instrumentation

The use of an online survey via Qualtrics was used for efficiency and quantitative data collection. The Qualtrics online survey was created to identify Wisconsin high school business teachers' use of industry certifications and qualifications to certify students (Appendix A). The researcher designed and self-administered the survey making it certain that all participants received exactly the same questions. The survey included a combination of multiple-choice and open-ended questions. The multiple-choice questions were designed to determine what industry certifications respondents used in their program, demographics of school community, and years of teaching experience. The industry certifications choices listed in the survey included the entire list of Wisconsin's DPI incentive grant approved certifications for business and information

technology education. The open-ended questions were designed to gather information regarding why they chose the named industry certifications, what qualifications/training was required to certify students, and how they obtained the qualifications/training. All questionnaire statements were aligned to the study problem, purpose, and questions. A consent form was created to secure permission for participation in the study (Appendix B).

Data Collection Procedures

A request to participate in the survey was posted on the Wisconsin DPI Business & IT Education Google Hangout Community. The post included an explanation of the study and a link to the survey. Consent information was included at the beginning of the survey. The survey was designed to take respondents between three to five minutes to complete. The survey was available for 18 days. The researcher reposted the survey link after 8 days of the original post, with a final reminder on the last day the survey was open. The survey closed at the end of 18 days. Each participant completed the survey at a time that best fit their schedule.

Data Analysis

The survey responses were tabulated and categorized through the online survey website. Analysis of the quantitative data was measured on a nominal scale and used to seek relationships between demographics and industry certification use. The qualitative data was reviewed and processed for themes or patterns. The data collected from the surveys was reviewed by the researcher and analyzed to determine what industry certifications were used, why, and the qualifications acquired by teachers to certify students. The data was translated into both table and narrative form, categorized and sorted for common elements in order to establish evidence of Wisconsin business and information technology teachers' use of industry certifications. A Fisher Exact test was used to determine whether there was any relationship between demographic

factors and use of certifications. The researcher then examined the data to formulate conclusions, implications, and recommendations.

Limitations

This study has the following limitations:

1. Limited only to business educators who are members of the Wisconsin DPI Business & IT Education Google Hangout Community and those who regularly check it. There may be some business educators who never saw the post, so had no opportunity to participate.
2. Certifications used in high school may be different than those used at the postsecondary level, so findings only apply to high school industry-based certifications.
3. The researcher prepared survey was not piloted for validity and reliability.

Chapter IV: Results

There has been a significant legislative push at the federal and state level for CTE programs to use industry-based credentials to provide documentation of student's achievement of academic and technical skills recognized by industry. There is a long history of certification in business education. However, there is no information on what industry-based certifications Wisconsin business teachers are using in their programs. The purpose of this study was to uncover the use of industry certifications in Wisconsin business education curriculum and what teachers were doing to become qualified to certify students in industry certifications. The research questions guiding this study were:

1. What industry certifications are Wisconsin business teachers using with students and why?
2. What are Wisconsin business teachers doing to make sure they are qualified to certify students?

Determining what industry certifications are most prominent in Wisconsin secondary business education programs and what qualifications teachers are obtaining could identify potential gaps in training and be addressed by postsecondary education institutions or businesses that offer the certifications.

Wisconsin high school business teachers were invited to take a 12-question survey to identify what industry certifications they were using, why, and what training/qualifications they obtained to certify students. This chapter identifies and analyzes the results from the research.

Demographic Data

The population for this study was Wisconsin high school business teachers, male and female of various ethnicities. The sample drawn from the population was high school business

teachers included in the Wisconsin DPI Business & IT Education Google Hangout Community. A link to an anonymous digital survey with a description of the study was posted to the Wisconsin DPI Business & IT Education Google Hangout Community. There were 51 responses. Respondents who answered “yes” to using industry certifications with students completed the full survey. Respondents who answered “no” skipped to the demographic questions. Of the 51 respondents, 26 (51%) said they do use industry certifications, and 25 (49%) said no.

The results showed the majority of respondents were from the Northeast region (33.3%) with slightly less from Southwest and Northwest (Table 1). There were no respondents from the North Central region using industry certifications. Almost half of the respondents taught in a school with a graduating class size range of 1-100 (Table 2). Yet the percentage using industry certifications (26.9%) was the same as the next largest size school. Using a Fisher’s Exact test, the two-tailed p-value for the groups’ using or not using certifications related to graduating class size (< 200 or > 200) was found equal to .4595. With a level of significance set at $p < .05$, the association between teachers who used industry certifications and size of school is considered to be not statistically significant.

Table 1

Teachers Responding and Those Using Industry Certifications by Region

State Region	Respondents by State Region		Teachers Using Industry Certifications	
	n = 51	Percentage	n=26	Percentage
Northeast	17	33.3%	11	42.3%
Southwest	15	29.4%	7	26.9%
Northwest	13	25.5%	3	11.5%
Southeast	5	9.8%	5	19.2%
North Central	1	1.9%	0	0.0%

Table 2

Respondents and Industry Certifications Based on Average Size of Graduating Class

Graduating Class Size	Respondents by Graduating Class Size		Teachers Using Industry Certifications	
	n = 51	Percentage	n=26	Percentage
1-100	23	45.1%	7	26.9%
101-200	10	19.6%	7	26.9%
401+	8	15.7%	5	19.2%
201-300	5	9.8%	4	15.4%
301-400	5	9.8%	3	11.5%

Table 3 identifies the number of years respondents have been teaching business education and those using industry certifications. Just over one-third of respondents (35.3%) have 21 or more years of experience teaching business education. The second highest response was 0-5 and

6-10 years. The study shows 47% of respondents using industry certifications taught 10 years or less. Using a Fisher's Exact test, the two-tailed p-value for the groups' using or not using certifications and the relationship to number of years teaching (<10 years or >10 years) was found equal to 1. With a level of significance set at $p < .05$, the association between teachers who used industry certifications and years of teaching experience was considered to be not statistically significant.

Table 3

Years of Teaching and Use of Industry Certifications

Years Teaching	Respondents by Number of Years Teaching		Teachers Using Industry Certifications	
	n = 51	Percentage	n=26	Percentage
0-5	13	25.5%	6	23.1%
6-10	11	21.6%	6	23.1%
11-15	5	9.8%	3	11.5%
16-20	4	7.8%	2	7.7%
21+	18	35.3%	9	34.6%

The survey results showed the high majority of respondents acquired teacher training with a 4-year business education teaching degree (72.5%). The next highest response was an alternative teaching license (19.6%). Interestingly, the results showed the majority (88.9%) of respondents teaching 21 or more years and using industry certifications identified having a 4-year business education degree, where the majority (66.6%) of respondents teaching 0-5 years and using certifications identified their teaching training as an "alternative teaching license" or "teaching degree in another content area" and are 38 years old or older. Using a Fisher's Exact

test, the two-tailed p-value for the groups' (using or not using certifications) and they type of teacher training (4-year or alternative/another content area) was found equal to .7938. With a level of significance set at $p < .5$, the association between teachers who used industry certifications type of teacher training was considered to be not statistically significant.

Table 4

Teacher Training and Use of Industry Certifications

Teacher Training	Respondents by Teacher Training		Teachers Using Industry Certifications	
	n = 51	Percentage	n=26	Percentage
4-Year business education teaching degree	37	72.5%	18	69.2%
Alternative teaching license	10	19.6%	6	23.1%
Teaching degree in another content area	4	7.8%	2	7.7%

The most frequent response for age was 54 years or older (31.4%). Nearly half (51%) of the respondents were 46 years or older. The survey results show almost three-quarters (70.4%) of the respondents were female. Using a Fisher's Exact test, the two-tailed p-value for the groups' (using or not using certifications) and the relationship to age (<45 or >45) was found equal to 1. With a level of significance set at $p < .05$, the association between teachers who used industry certifications and age 45 was considered to be not statistically significant.

Table 5

Age and Use of Industry Certifications

Age Range	Respondents by Age Range		Teachers Using Industry Certifications	
	n = 51	Percentage	n=26	Percentage
54+	16	31.4%	8	30.8%
46-53	10	19.6%	6	23.1%
38-45	11	21.6%	6	23.1%
30-37	8	15.7%	3	11.5%
22-29	6	11.8%	3	11.5%

Research Question 1: What Industry Certifications Are Wisconsin Business Teachers**Using With Students and Why?**

The first research question sought to determine what industry certifications Wisconsin secondary business teachers were using and why. The industry certification choices listed in the survey included the entire list of Wisconsin's DPI incentive grant approved certifications for business and information technology education. This list includes 32 industry certifications. The 26 respondents who use industry certifications were asked to select all of the certifications they were using with an option to list "other" certifications. Respondents could select multiple certifications; therefore, the frequency count is more than 26. Respondents identified using 9 of the 32 grant approved certifications. Table 6 lists the certifications identified and the number of respondents using the certification. The most frequent response was the Microsoft Office Specialist (MOS) certification (84.6%), with the next highest response, Adobe Certified Associate, substantially lower (11.5%). The study showed the majority (81%) of respondents

were using one certification in their program. Five respondents (19%) were using more than one certification, with one using three certifications and the others using two.

Two respondents listed “other” certifications: “National Retail Federation’s Customer Service and Sales Certification,” “MBAResearch ASK Certification,” and “Industry Recognized Pathway Certificate though NWTC (Access, Word, Excel, Outlook, PowerPoint).”

Table 6

Industry-based Certifications Respondents were Using (n=26)

Industry Certifications	Frequency	Percentage
Microsoft-Office Specialist (MOS)	22	84.6%
Adobe Certified Associate (ACA)	3	11.5%
QuickBooks Certified User	3	11.5%
Adobe Photoshop	2	7.7%
Other	2	7.7%
Adobe InDesign	1	3.8%
Adobe Premiere Pro	1	3.8%
CISCO: IT Essentials	1	3.8%
CompTIA: A+	1	3.8%
Microsoft-Technology Associate (MTA)	1	3.8%

In an open-ended format, the respondents were asked why they chose the identified industry certification(s). The researcher analyzed the responses and categorized them into like items. Respondents could list multiple reasons and, therefore, the frequency total is more than 26. Table 7 shows the reasons identified for choosing the industry certifications. The most frequent response was they received funding (50%). Some of the respondents received funds

from more than one source. Of the 13 respondents who noted funding, 10 (38.4%) stated they used the certification because they received grant money from the state, 6 (23.1%) noted they received a promotion by Microsoft for free software or two years of certifications; 2 (7.7%) specifically noted the promotion “Microsoft Imagination Academy.” The next highest response to why they used the identified certifications was that it align with the curriculum they were already teaching (30.8%).

Table 7

Reasons Why Respondents Chose the Identified Industry-Based Certification (n=26)

Respondents Wrote in More Than One Course

Reason for choosing industry certification	Respondents	Percentage
Funding (State Grant/Initially Free)	13	50.0%
Aligns with current curriculum	8	30.8%
Industry identifiable skills	4	15.4%
Provide options for students	3	11.5%
Accurate course assessment tool	1	3.8%
Accessible	1	3.8%

Respondents were asked to list what courses they taught to find relationships between certifications being used and courses being taught. Each respondent wrote in more than one course. The researcher reviewed the responses and categorized the course titles into like items. Table 8 identifies the courses and the number of respondents who taught each course. The most frequent responses were Computer Applications/Microsoft Office (80.8%), Accounting (53.8%), and Personal Finance (50.0%). Of the 21 responses for Computer Applications/Microsoft Office,

13 (61.9%) noted the class's curriculum contained Microsoft software or Microsoft Office was in the course title itself.

Table 8

Courses Respondents Were Teaching (n=26) Respondents Wrote in More Than One Course

Course	Frequency	Percentage
Computer Applications/Microsoft Office	21	80.8%
Accounting	14	53.8%
Personal Finance	13	50.0%
Introduction to Business	11	42.3%
Entrepreneurship	11	42.3%
Marketing	9	34.6%
Business Law	9	34.6%
Web/Graphic Design	8	30.8%
Computer Science	6	23.1%
Business Management	5	19.2%
Information Processing/IT	5	19.2%
Publications/Desktop Publishing/ Digital Media	4	15.4%
Career/Workplace Basics	4	15.4%
Yearbook	3	11.5%
Youth Apprenticeship/Work Based Learning/Co-op	1	3.8%
Google	1	3.8%
International Business	1	3.8%
Economics	0	0.0%

Research Question 2: What Are Wisconsin Business Teachers Doing to Make Sure They Are Qualified to Certify Students?

The second research question sought to determine what Wisconsin business teachers were doing to make sure they were qualified to certify students. In an open-ended format, respondents were asked what qualifications/training was required in order to certify students. The researcher analyzed the responses and categorized them into like items. Table 9 shows the qualifications identified. Two categories received the same number and the highest number of respondents, with 9 respondents (34.6%) identifying the requirement to register as a test proctor/testing center and 9 (34.6%) identifying no qualifications needed. All 18 of these respondents used MOS certification. The two respondents who identified needing a valid license to teach content/proof of knowledge were the two who listed the “other” certifications – not MOS. Five respondents either left the question blank or misunderstood and listed the requirements for students to be certified and were excluded from the data.

Table 9

Qualifications/Training Required for Respondent to Certify Students (n=26) Respondents Wrote in More Than One Qualification

Teacher Qualifications Needed	Frequency	Percentage
Register as Test Proctor/Testing Center	9	34.6%
No qualifications required	9	34.6%
Left Blank/Excluded	4	15.4%
Use of software in curriculum	2	7.7%
Valid license to teach content in WI/Proof of knowledge	2	7.7%

Respondents were asked in an open-ended question what training/qualifications they obtained to certify students. The researcher analyzed the responses and categorized them into like items. Table 10 shows the training/qualifications identified. The results show 61% either stated they were self-taught (38.5%) or voluntarily obtained the certification (22.1%).

Table 10

Training/Qualifications Respondents Obtained to Certify Students (n=26) Respondents Wrote in More Than One Qualification

Training/Qualifications	Frequency	Percentage
Self-taught	10	38.5%
Voluntarily certified themselves/took test	6	23.1%
Matches content of curriculum licensed to teach	2	7.7%
Industry training/experience	1	3.8%
Approval from technical college	1	3.8%

Respondents who identified they were “self-taught” noted using certification website resources, attending training sessions or conferences such as WBEA and CESA workshops, and learning with the student through study materials. The respondent who identified approval from technical college was the same respondent who listed the Pathway Certificate through NWTC as the certification used.

Chapter V: Discussion, Conclusion and Recommendation

There has been a substantial push at the state and national level for CTE programs to use industry certifications in their programs. The purpose of this study was to uncover the use of industry certifications in Wisconsin business education curriculum and what teachers were doing to become qualified to certify students in industry certifications. The study sought the answer the following research questions:

1. What industry certifications are Wisconsin Business teachers using with students and why?
2. What are Wisconsin Business teachers doing to make sure they are qualified to certify students?

The significance of this study is in determining what industry certifications were most prominent in secondary business education programs so that postsecondary programs and business/industry know what is being used, supporting alignment of education and industry needs. Knowing what training teachers are obtaining could identify potential gaps in training that could be addressed by postsecondary education institutions or businesses that offer the certifications.

The research conducted centered on identifying what industry certifications Wisconsin business teachers were using, why, and the qualifications acquired by teachers to certify students. To answer these questions and reach a large and wide-spread population, a digital survey was conducted and posted on the Wisconsin Business and IT Education Google Hangout Community, inviting all Wisconsin high school business teachers to participate.

The survey included a combination of multiple-choice and open-ended questions. The multiple-choice questions were designed to determine what industry certifications respondents

used in their program and for demographics of teachers and school community. The industry certification choices listed in the survey included the entire list of Wisconsin's DPI incentive grant approved certifications for business and information technology education. The open-ended questions were designed to gather information regarding why they chose the named industry certifications, what qualifications/training were required to certify students, and how they obtained the qualifications/training. Conclusions have been drawn based upon the findings of the study and their relationship to the literature review.

Discussion

The first research question sought to determine what industry certifications Wisconsin secondary business teachers were using and why. Respondents could choose more than one certification listed in the survey. The findings of the study for what industry certifications Wisconsin high school business teachers were using showed evidence that over 3/4 are using Microsoft-Office Specialist (MOS) certifications in their programs (84.6%). The next highest at 11.5% were Adobe Certified Associate (ACA) and QuickBooks Certified User. The other eight certifications listed by respondents included Adobe (27%), CISCO: IT Essentials (3.8%), and CompTIA: A+ (3.8%). This shows that respondents were using vendor-specific software applications versus IT occupation specific certifications. The two IT certifications used, CISCO: IT Essentials and CompTIA: A+, assess the fundamental skills required in the IT field and are not job or vendor specific. The literature indicated that certifications that focus on foundational concepts may benefit secondary students more than job or vendor-specific certifications because they can be transferrable through their process of identifying a career pathway and not limited to a focused skill set (Randall & Zirkle, 2005). It is interesting that all respondents used vendor-specific certifications and few used foundational certifications. However, the literature indicated

that Microsoft has played a large role in educations' and business' general productivity. Microsoft and Apple were the first leaders in computer operating systems at a time when computers in education and business increased to the point where most people had access to a computer (Boe, 1989), substantiating a long, sustained history in education. This supports the idea that Microsoft be considered as a foundational certification for productivity in school and work. It is interesting that the survey results indicated Apple certifications were not used by respondents. The literature indicated that Apple products typically cost more than Microsoft and are compatible with few devices but their own (Rappaport & Halevi, 1991). The cost factor and compatibility could be part of the reason why respondents used Microsoft certifications and software. However, the trend of free cloud services, such as Google, could have an impact on what is used in business and business education in the future.

The first research question also sought to find reasons why Wisconsin high school business teachers were using the identified certifications. The findings of the study indicated that the majority of respondents chose the certifications because of funding (50%), either from state grant money (38.4%) and/or Microsoft promotions (23.1%). Six (23.1%) respondents noted in an open-ended format that, when they began using the MOS certification, it was offered for free for two years with use of the software. Two (7.7%) mentioned a program called the Microsoft Imagine Academy, a volume licensing agreement/membership program for education institutions through Microsoft. The Microsoft Imagine Academy was found in the literature to be one of the programs Microsoft used to provide training, curriculum, and Microsoft products and promotions organized for students and educators to earn Microsoft certifications (Microsoft, 2018, Microsoft). At the time of the survey, the MOS certification was offered through Wisconsin's DPI incentive grant approved certifications for business and information technology education,

encouraging the teachers to continue using it. It is not clear whether funding is driving the use of certifications because it is expensive to offer certification exams to students or because funding allows them to purchase the software licenses or computer equipment.

The next highest response for why respondents chose the certification was it aligned with the curriculum they were already teaching (30.8%). This aligned with other survey results showing that the classes taught the most were Computer Applications/Microsoft Office (80.8%), and 84.6% reported using the MOS certification. The next two most taught classes were accounting and personal finance, relating to the data showing QuickBooks Certified User was one of the next highest industry certifications being used (11.5%).

Other reasons for why respondents chose the certifications, noted by only a few, were 1) the knowledge and skills were important to industry, 2) they provided options for students, and 3) being accessible and an accurate course assessment tool (which could be included under aligning with curriculum). Though the literature suggested certifications add value, they are not the top reason why respondents chose industry certifications. It is possible that a larger sample, one that includes all regions of the state, could provide different results.

The literature indicated that skills in Microsoft Office were still very important to industry (Anderson & Gantz, 2016), supporting the use of MOS certifications in business education. Also, MOS is listed on Wisconsin grant approved certifications for business and IT educators (WI DPI, 2018, CTE). This list is revised at least bi-annually by the DWD and DPI staff, choosing from a list of national and state certifications that are accessible, in high-demand, recognized, current, and prepare students for labor market needs. This supports Wisconsin business teachers in knowing MOS certifications have been identified by the state as being important to industry.

The second research question sought to determine what Wisconsin business teachers were doing to make sure they were qualified to certify students. The two most frequent responses for what qualifications are required by the teacher to certify students were that they needed to register as a test proctor/testing center (34.6%) and that there were no required qualifications to certify students (34.6%). Registering as a test proctor/testing center seemed more like a requirement than a qualification in terms of having the skills and knowledge themselves to certify students. It appears as though no formal qualifications or training is required. This data was similar to the lack of evidence found in the literature review regarding required qualifications for teachers to certify students. The only evidence found was that Certiport, which offers the MOS certification, required registration as a proctor/testing center.

However, the literature did indicate that state CTE programs have encouraged or required CTE teachers to become trained/certified in the industry credential to expand their competency in the skill sets and job roles for which they train/certify students (North Carolina DPI, 2018). Though there was no evidence of Wisconsin being one of those states, when respondents were asked what qualifications/training they obtained to certify students, the majority (60%) either stated they were self-taught (38.5%) or voluntarily certified themselves in the certification (23.1%). It would appear as though, if education and industry want more certifications to be made available to students, we need to figure out a way to train or certify teachers in a more effective way. Respondents who identified they were “self-taught” noted using certification website resources, attending training sessions or conferences such as WBEA and CESA workshops, and learning with the student through study materials as supported by the professional development opportunities in the literature review.

The majority of respondents who used industry certifications taught business education for 21+ years (35.3%), with the next highest response tied for 0-5 years and 6-10 years (23.1%). Microsoft Office has a long history in business and in education as it was launched 28 years ago (Microsoft, 2015). The data from the study could support that the respondents used the MOS certification most because it has a long history and was relevant to business and education for most of their teaching career. The data showed that the next highest use of industry certifications was among teachers who have taught business education for 0-5 and 6-10 years, going to the other end of the spectrum and leaving respondents teaching 11-20 years as the smallest group using certifications. It brings to question whether these respondents chose to use the industry certification or if they continued using the certifications that the teachers before them were using. It could also indicate an increased awareness of industry certifications from their teacher training. Perhaps CTE teacher training programs began including more information regarding industry certifications since the 2006 Perkins IV, which was about 10 years ago at the time of this study.

The survey results showed the high majority of respondents using certifications acquired teacher training with a 4-year business education teaching degree (69.2%). The next highest response was an alternative teaching license (23.1%). Interestingly, the study shows the majority (88.9%) of respondents using certifications who had taught over 21 years identified having a 4-year business education degree, where the majority (66.6%) of respondents using certifications who taught 0-5 years identified their teaching training as an “alternative teaching license” or “teaching degree in another content area” and are 38 years old or older. The trend in alternative teaching license for respondents entering the profession reflects Wisconsin’s 2016 education

reform of providing alternative licensure programs only for educational areas in high need of teachers, which at the time included CTE (WI DPI, 2018, Pathways).

Conclusion

In conclusion, the use of MOS certification was an overarching trend for Wisconsin secondary business educators. This use is supported by the long history of Microsoft being a leader in business and education. However, the recent trend of districts using cloud services in place of software license agreements could impact what is used in the future of business and therefore business education. Certifications that focus on foundational or general skills that can be applied across fields seem better for secondary education.

Funding seemed to be a big deciding factor when it came to choosing certifications. Respondents strongly identified that they use MOS because of Microsoft promotions and state grant funding for the certifications. The funding by the state supports the idea that MOS has been identified as being important to Wisconsin businesses. The majority of respondents are teaching a computer applications course, typically consisting of Microsoft Office curriculum, allowing the use and integration of MOS certifications to be seamless.

The literature review and the study indicated there are no identifiable qualification requirements for teachers to certify students beyond registering as a testing proctor/center. It is pretty clear that the vast majority of respondents are self-taught/trained. They are voluntarily becoming certified themselves and learn with the students using the curriculum and study resources provided by Microsoft.

Over one-third of respondents taught over 21 years and have obtained a 4-year business education teaching degree. However, 47% of respondents taught 10 years or less and the majority of those respondents (57%) had an alternative teaching license. The trend of teacher

training becoming experienced based could impact teachers' perspectives on what certifications should be used in secondary business education.

Recommendations

Moving forward, the following recommendations are provided based on the findings of this study:

1. Because business teachers are self-taught to be qualified to certify students, MOS should be a part of professional development/training.
 - a. Offer training at state conferences.
 - b. Consider MOS training for teacher education programs.
2. Retain MOS on the grant approved list for business and IT educators to support funding and use of the certifications.
3. With the trend of free cloud-based technology in education, districts should support business education programs in purchasing Microsoft software and platforms to continue teaching the curriculum and offering certifications.
4. Provide Adobe training for business teachers.
5. Additional research may include:
 - a. Asking respondents who do not use industry certification why they don't.
 - b. Determine how many Wisconsin business teachers know about the Wisconsin's DPI incentive grant approved certifications for business and information technology education, and if yes, if they've considered using another certification. This could provide further insight on the correlation between whether a certification was chosen primarily related to being funded or not.

- c. Determine what respondent's districts are choosing for technology platforms and software. If they are moving to cloud-based systems, how is that affecting business education certifications? With the high use of Microsoft, are districts supporting the purchase of Microsoft software for business education programs?
- d. Resurvey Wisconsin secondary business teachers in the North Central and Southeast regions as this study had very few respondents using industry certifications from these regions, indicating a broader survey would provide an even greater understanding of certification use in Wisconsin.

References

- Achieve & Advance CTE. 2016. *How states are making career readiness count: A 2016 update*. Washington, DC. Retrieved from <https://careertech.org/sites/default/files/MakingCareerReadinessCountUpdate-2016.pdf>
- Advance CTE. (2018). *Career clusters*. Retrieved from <https://careertech.org/career-clusters>
- Advance CTE. (2018). *State policies impacting CTE: 2017 year in review*. Retrieved from <https://careertech.org/resource/2017-state-policies-impacting-cte>
- Advance CTE. (2016). *State policies impacting CTE: 2015 year in review*. Retrieved from https://cte.careertech.org/sites/default/files/2015_State_Policy_Review_Final.pdf
- Anderson, C., & Gantz, J. (2016). Keys to the future: Align workforce readiness skills to ensure student success. *International Data Corporation*. Retrieved from <https://msdnshared.blob.core.windows.net/media/2016/06/US41207816.pdf>
- ASKInstitute.org. (2018). *Assessment of skills and knowledge for business*. Available at http://www.askinstitute.org/images/PDFs/ASK_Business_Institute_Brochure.pdf
- Association for Career and Technical Education [ACTE]. (2017). *Certification Data Exchange Project*. [online] Available from https://www.acteonline.org/uploadedFiles/Policy_and_Advocacy/Key_Issues/CDEP-Final-Report.pdf [Accessed 4 Apr. 2018].
- Association for Career and Technical Education [ACTE]. (2018). *What is a credential*. Retrieved from https://www.acteonline.org/uploadedFiles/...is.../What_is_a_Credential_Aug2015.pdf

- Berns, R. & Erickson, P. (2001). *Contextual teaching and learning: preparing students for the new economy. The highlight zone: Research @ work No. 5*. Retrieved from <https://files.eric.ed.gov/fulltext/ED452376.pdf>
- Boe, T. (1989). The next step for educators and the technology industry: Investing in teachers. *Education Technology*, 29(3), 39-44. Retrieved from http://www.jstor.org/stable/44426398?seq=1#page_scan_tab_contents
- Brand, B., Valent, A., & Browning, A. (2013). How career and technical education can help students be college and career ready: A primer. *American Institutes for Research*. Retrieved from <http://www.aypf.org/wp-content/uploads/2013/04/CCRS-CTE-Primer-2013.pdf>
- Brown, J. S., Collins, A., & Duguid, P. (1989, February). Situated cognition and the culture of learning. *Educational Researcher*, 18(1), 32-42. Retrieved from https://people.ucsc.edu/~gwells/Files/Courses_Folder/ED%20261%20Papers/Situated%20Cognition.pdf
- Certiport. (2018). *About Certiport*. Retrieved from <https://certiport.pearsonvue.com/About/What-we-do>
- Colorado Department of Education. (2015). *Industry certification implementation, recommendations, resources, and tools*. Retrieved from <https://www.cde.state.co.us/postsecondary/industry-certification-workgroup-report>
- Computer Science. (2018). *Certifications in cs*. Retrieved from <https://www.computerscience.org/degrees/certifications/>
- Education Commission of the States [ECS]. (2014). Career and technical education: States aligning programs to meet workforce needs. *The Progress of Education Reform*.

- Evers, T. (2015). Learning that works for Wisconsin CTE. *Wisconsin Department of Public Instruction*. Retrieved from <https://dpi.wi.gov/sites/default/files/imce/cte/ctebrochure.pdf>
- Foster, J., & Pritz, S. (2006). *The certification advantage*. Retrieved from <https://www.acteonline.org/WorkArea/DownloadAsset.aspx?id=2904>
- Goodman, T., Meyer, M., & Imperatore, C. (2014). Incorporating industry-recognized certifications. *Techniques*. Retrieved from <https://www.acteonline.org>.
- Kennedy, N. (1978). *An analysis of shorthand usage as perceived by select Ogden, Utah business executives*. Retrieved from <https://digitalcommons.usu.edu/cgi/viewcontent.cgi?referer=https://www.google.com/&httpsredir=1&article=4390&context=etd>
- Lave, J. & Wenger, E. (1991). *Situated learning: Legitimate peripheral participation*. New York, NY: Cambridge University Press.
- Lualhati, J. C. (2006). The ABCS of certification on use. *Techniques: Connecting Education & Careers*, 81(1), 24.
- Lynch, R. (1997). *Designing vocational and technical teacher education for the 21st century*. Columbus: ERIC Clearinghouse on Adult, Career, and Vocational Education.
- Manufacturing Institute. (2013). National survey on the value of a credentialed workforce. *Final Report*. Retrieved from <http://connectingcredentials.org/resources/magnet-the-manufacturing-advocacy-and-growth-network/>
- McClelland, K., & Gardner, C. (2018). *State response to the skills gap: Successful policies advancing industry credentials and manufacturing education*. Retrieved from <http://www.themanufacturinginstitute.org/Research/Public-Policy-Series/~~/media/ABEBEAD7170B4D0CA0951A694378E960.ashx>

- Microsoft. (2018). *Microsoft education*. Retrieved from <https://education.microsoft.com>
- Microsoft. (2018). *Students: Get certified in four easy steps*. Retrieved from <https://www.microsoft.com/en-us/learning/microsoft-certifications-for-students.aspx>
- Microsoft Education. (2015). *A brief history of Microsoft Office*. Retrieved from <https://enterprise.microsoft.com/en-gb/articles/roles/it-leader/brief-history-microsoft-office/>
- Morrison, T., Maciejewski, B., Giffi, C., DeRocco, E. S., McNelly, J., & Carrick, G. (n.d.). 2011 *Skills gap report*. Retrieved from <http://www.themanufacturinginstitute.org/Research/Skills-Gap-in-Manufacturing/2011-Skills-Gap-Report/2011-Skills-Gap-Report.aspx>
- National Business Education Association [NBEA]. (2018). *Business Education Standards*. Retrieved from <https://www.nbea.org/newsite/curriculum/standards/index.html>
- NBEA. (2013). *What America's students should know and be able to do in business*. Retrieved from https://neapolitanlabs.education/assets/north_linn/files/business_education.pdf
- National Museum of American History. (2018). *Gregg Shorthand Speed Certificate (1944)*. Retrieved from http://americanhistory.si.edu/collections/search/object/nmah_1321689
- National Student Clearinghouse [NSC] Research Center. (2015). *Completing college: A national view of student attainment rates – fall 2009 cohort*. Retrieved from <https://nscresearchcenter.org/signaturereport10/#ExecutiveSummary>

- New York State Education Department. (1910). *State of New York six annual report of the education department*. 3, 333-366. Retrieved from https://books.google.com/books?id=SEE_AAAAYAAJ&pg=PA335&lpq=PA335&dq=history+of+shorthand+credentials&source=bl&ots=gp5QjY6tOa&sig=ajNkzcwXV0480e_An1Ifv_t8zQY&hl=en&sa=X&ved=0ahUKEwiGt73yvM7aAhVk5IMKHfN9B0sQ6AEIfDAH#v=onepage&q=history%20of%20shorthand%20credentials&f=false
- North Carolina Department of Public Instruction. (2018). *Certification and credentialing briefing paper: Credentialing for CTE students*. Retrieved from <http://www.dpi.state.nc.us/docs/cte/related-services/certification/briefing-paper.pdf>
- NRCCTE. (2010). *Inventory of technical skills assessments*. Retrieved from <http://www.nrccte.org/resources/publications/inventory-technical-skills-assessments>
- Randall, M., & Zirkle, C. (2005). Information technology student-based certification in formal education settings: Who benefits and what is needed. *Journal of Information Technology Education: Research*, 4, 287-306. Informing Science Institute. Retrieved from <https://www.learntechlib.org/p/111576/>.
- Rappaport, A. & Halevi, S. (1991). *The computerless computer company*. Retrieved from <https://hbr.org/1991/07/the-computerless-computer-company>
- Shepard, L. (2000). The role of assessment in a learning culture. *Educational Researcher*, 29(7), 4-14.
- Singer, N. (2017). How Google took over the classroom. *New York Times*. Retrieved from <https://www.nytimes.com/2017/05/13/technology/google-education-chromebooks-schools.html>

- Statista. (2018). Apple is falling behind in the educational market. *Classroom Tech*. Retrieved from <https://www.statista.com/chart/13383/devices-shipped-to-schools-by-platform/>
- Stipanovic, N., Shumer, R., & Stringfield, S. (2012). Lessons learned from highly implemented programs of study. *Techniques: Connecting education and careers*, 87(1), 20-23. Retrieved from <https://eric.ed.gov/?id=EJ976600>
- Stone, I. (2009). A Perkins challenge: Assessing technical skills in CTE. *Techniques: Connecting Education and Careers*, 84(2), 21-23.
- Stone, J. & Stringfield, S. (2005). *Earning industry-recognized credentials in high school: Exploring research and policy issues*. Retrieved from <https://ejournals.lib.vt.edu/JCTE/article/view/653/950>
- U.S. Congress. Senate and House of Representatives (2006). *Carl D. Perkins career and technical education improvement act of 2006*. Retrieved from https://s3.amazonaws.com/PCRN/uploads/perkins_iv.pdf
- U.S. Department of Education. (2014). National assessment of career and technical education. *Final report*. Retrieved from <https://www2.ed.gov/rschstat/eval/sectech/nacte/career-technical-education/final-report.pdf>
- Wilcox, D. (2006). *The role of industry-based certifications in career and technical education*. Retrieved from <https://www.acteonline.org/search.aspx?q=industry%20certification>
- Wisconsin Department of Workforce Development [DWD]. (2016). High school pupil workforce training programs. *Wisconsin fast forward: Blueprint for prosperity*. Retrieved from <http://wisconsinfastforward.com/blueprint.htm>

Wisconsin Department of Public Instruction [WI DPI]. (2018). *Business & information technology professional learning*. Retrieved from <https://dpi.wi.gov/bit/professional-learning>

Wisconsin Department of Public Instruction [WI DPI]. (2018). CTE incentive grants classes of 2017 and 2018 certifications list. *Wisconsin Fast Forward*. Retrieved from http://wisconsinfastforward.com/prosperity/pupil/2017_cte_certification_list.pdf

Wisconsin Department of Public Instruction [WI DPI]. (2018). *Pathways to licensure*. Retrieved from <https://dpi.wi.gov/tepd/paths>

Appendix A: Survey Questionnaire

1. What business education courses do you teach?

2. Are you using industry-based certifications in your business education program? (If you answer yes, please complete the full survey. If you answer no, please answer questions 7-9)
 - a. Yes
 - b. No

3. What IBC(s) do you currently use in your business program? (select all that apply)

Adobe:

- Adobe Certified Associate (ACA)
- Dreamweaver
- Flash
- Illustrator
- InDesign
- Photoshop
- Premiere Pro

Apple:

- Certified Associate- Mac Management
- Certified Associate- Mac Integration
- Certified Support Professional (ACSP)
- Certified Mac Technician (ACMT)
- Apple Certified Pro

Autodesk Certified User:

- Autodesk AutoCAD
- Autodesk Inventor- Imperial or Metric
- Autodesk REVIT- Imperial or Metric
- Autodesk Maya
- Autodesk 3dsMax
- Autodesk Fusion 360

Center for Financial Training through American Banking Association**(ABA):**

- Bank Teller
- Customer Service Representative

CISCO:

- IT Essentials
- Cisco Certified Entry Networking Technician (CCENT)
- Cisco Certified Network Associate (CCNA) – Any specialty

CompTIA:

- A+

CIW:

- Web Foundations Associate

Certiport:

- Internet Core Computing (IC3)
- MS- Technology Associate (MTA) (*Certiport or Microsoft*)
- MS- Office Specialist (MOS) (*Certiport or Microsoft*)

- Adobe Certified Associate (ACA)
- AutoDesk Certified User
- QuickBooks Certified User (*Certiport or Intuit*)
- Linux Essentials (*Certiport or Linux Professional Institute*)

Other:

- _____

4. Why did you choose these industry certifications for your high school business program?
5. What qualifications/training are required for you to certify students? (Please address qualifications for each IBC you identified)
6. How have you obtained qualifications/training to certify students?

Demographics

7. Select the State's region for the school in which you teach secondary business education.
 - a. Northwest
 - b. North Central
 - c. Northeast
 - d. Southwest
 - e. Southeast



8. Average size of graduating class:

- a. 1-100
- b. 101-200
- c. 201-300
- d. 301-400
- e. 401 +

9. How many years have you been teaching business education?

- a. 0-5
- b. 6-10
- c. 11-15
- d. 16-20
- e. 21 +

10. Teacher Training

- a. 4-Year business education teaching degree
- b. Teaching degree in another content area
- c. Alternative teaching license

11. Gender

- a. Male
- b. Female

12. Age Range

- a. 22-29
- b. 30-37
- c. 38-45
- d. 46-53
- e. 54+

Appendix B: Consent Form

Consent to Participate In UW-Stout Approved Research

Title: A Study on Wisconsin High School Business Teachers' Use of Industry-Based Certifications

Investigator:

Ashley Towner
millsa@my.uwstout.edu
608-385-7751

Description:

I am a high school business teacher, completing my M.S degree in CTE through the University of Wisconsin – Stout. There has been a significant push at the state and national level for CTE educators to use industry-based certifications in their programs to align with industry needs. I am requesting your participation in a 3-5 minute online survey to uncover the use of industry certifications in Wisconsin high school business education programs and what teachers are doing to remain qualified to certify students.

Risks and Benefits:

The risks of the study could include loss of time and any ergonomic issues from participating on a computer. Although this survey asks about certifications used in participant's programs, it has no bearing on your employment or economic well-being.

This information could benefit Wisconsin high school business teachers by providing a direction in the decisions we make about curricular content, resources, and professional development to be relevant and meet educational and industry needs. Aggregated data will be shared with members of the Wisconsin Business and IT Education Google Hangout Community.

Time Commitment and Payment:

The survey is designed to take participants 3-5 minutes to complete.

Confidentiality:

Your name will not be included on any documents. We do not believe that you can be identified from any of this information as the data comes into the online survey website, Qualtrics, anonymously with only numeric values to identify participants.

Right to Withdraw:

Your participation in this study is entirely voluntary. You may choose not to participate without any adverse consequences to you. You have the right to stop the survey at any time. However, should you choose to participate and later wish to withdraw from the study, there is no way to identify your anonymous document after it has been turned into the investigator. You are participating in an anonymous online survey, once you submit your response, the data cannot be linked to you and cannot be withdrawn.

IRB Approval:

This study has been reviewed and approved by The University of Wisconsin-Stout's Institutional Review Board (IRB). The IRB has determined that this study meets the ethical obligations required by federal law and University policies. If you have questions or concerns regarding this study, please contact the Investigator or Advisor. If you have any questions, concerns, or reports regarding your rights as a research subject, please contact the IRB Administrator.

Investigator: Ashley Towner,
608-385-7751, millsa@my.uwstout.edu

Advisor: Place your advisor's name, phone number, and email address here.

IRB Administrator
Elizabeth Buchanan
Office of Research and Sponsored Programs
152 Vocational Rehabilitation Bldg.
UW-Stout
Menomonie, WI 54751
715.232.2477
Buchanane@uwstout.edu

Statement of Consent:

By clicking "next" you agree to participate in the survey entitled, "**A study on Wisconsin High School Business Teachers' Use of Industry-Based Certifications.**"