

SUCCESSFUL COLLABORATION PARAMETERS FOR BUSINESS AND
COMMUNITY COLLEGES: A QUALITATIVE CASE STUDY OF SCHOOLCRAFT
COLLEGE

by

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ABSTRACT

Industry leaders need a steady stream of highly skilled and motivated workers to continue to grow their businesses to enhance the American economy. Community college leaders play a crucial role in ensuring that the labor pool is fully prepared with relevant education to ensure no gaps exist in a company's growth plans. Currently the labor pool is not meeting the requirements for highly skilled jobs, as millions of positions are unfilled. Although students are graduating from higher education institutions in record numbers, their skills are lacking.

One solution is to develop significant partnerships between leaders in industry and the community college. A case study was conducted at Schoolcraft College to determine the type of environment, attributes, academic integration methods, and leadership characteristics that are necessary to create sustainable collaborations with industry.

A mixed methods approach was utilized to survey 56 local businesses in the College's service region regarding their insight on how collaborations could be mutually beneficial. A quantitative survey was used to identify the levels of awareness and interest regarding the College's assets and services by industry. A follow-up, qualitative survey was used to delve and ascertain exactly what industry was looking for to create and sustain collaborations with the College leaders.

Industry leaders were looking for four major findings that were concluded in this study:

1. Effective interactions that would lead to a significant relationship with an affixed team from the College.
2. Expanded educational focus in which industry wanted the College to perform talent recruitment and placement functions.
3. Academic transformation in which the faculty would be immersed in the industry for extended periods to learn, and then to retool the curriculum.
4. Use of assets by which the College could host industry hot-button topics and prognosticate about future skill requirements for various industries.

DEDICATION

I dedicate all of the work on this product to my loving family. Their ability to support my efforts in this endeavor was incredible and, for that, I will be eternally grateful. I want to thank my family for allowing me to disengage at times to fulfill a very important step in my career. I especially want to thank my lovely wife, Leslie, for her patience and undying support through this journey. Her encouragement and ability to stand by my side for moral support was incredible inspiration to complete this marathon of a task.

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CHAPTER 1: INTRODUCTION

Community Colleges and the Need to Address the Skill Gap

Community colleges are restructuring their financial models to include alternative revenue sources, while continuously trying to increase the placement of students into effective experiential learning. Conversely, the corporate world is in a continuous loop of unsuccessful attempts to fill job openings because applicants lack the skills or experiences needed in today's job market. A consistent wave of authors has addressed the on-going and increasingly larger gap between qualified applicants and unfilled, good-paying jobs. This gap is notable in many areas, particularly in Michigan where workforce skills are evolving to meet new skill sets.

Several leaders have shared their view on this notable gap. For example, Roelofs (2014) mentioned that Michigan has more than 70,000 unfilled, well-paying jobs. Varying opinions exist regarding whether this job gap should be addressed by colleges, business, or both. McKernan and Hansen (2014) provided commentary for college and business partners who are jointly creating extensive "pipelines" together to address the issue. To contrast this direction, McKernan and Hansen also advocated that the educational system should adopt an approach used by the Germans: identifying students in the eighth grade who are both interested in and could apply technical competencies effectively. The skills gap problem will continue to grow with advancements in

technology and continued global competition; therefore, these issues must be addressed in some manner.

One of community college's primary outputs is the integration of current workforce requirements into its curriculum to achieve an education that supports a "real world" application. One of the most common tools to accomplish in creating curriculum in an occupational area is the developing a curriculum (DACUM) process. Norton (1997) provided excellent examples of how educators and business could come together to perform a detailed task analysis that would be related to competencies in relevant industries. Businesses can provide excellent input into the educational DACUM process through their expertise regarding the requirements to complete specific occupational tasks. These components, combined with a two- to three-day session of curriculum developers and subject matter experts (SMEs), will allow them to create a curriculum that will assist both the college and the industries.

To reverse this issue, partnerships with industry that are driven by industry leaders can stem the tide of outdated curriculum and provide experiential learning opportunities. Unfortunately, resources are currently limited in the community college world. According to the Michigan Community College Association (2015a), more than 34% of revenue for Michigan community colleges comes from local property taxes. The recession of 2009 has greatly affected local property taxes over the last six years and Dadayan, Stenson, and Boyd (2012) projected that this affect would continue for decades to come. Michigan's local community college boards have traditionally kept tuition rates low, which in turn made the revenue picture bleak in the face of rising costs. The business model of community colleges is drastically transforming the situation such that alternative revenue is not a "nice-to-have" resource, but rather a "need-to-have" resource

for institutions so that they can continue to serve their constituents effectively. In several core areas, major progress could be achieved.

A potential answer to both dilemmas—declining revenues and a relevant workforce curriculum—is found in designing more effective and sustainable partnerships between public and private entities. Research is needed to understand better how public community colleges and private enterprises view and approach each other; this understanding could cause a transformation of actions that would result in collaborative and mutually beneficial partnerships. Therefore, in this study, the researcher thoroughly explores how to develop, sustain, and assess effectively mutually beneficial partnerships between community colleges and industries.

Mutually Beneficial Partnerships

Frank and Smith (2000) defined partnerships using four criteria. Partners

- share authority;
- have joint investment of resources;
- result in mutual benefits; and
- share risk, responsibility, and accountability.

Partnerships are not new; however, the current environment in higher education has forced organizations to reach outside to identify options that could not be achieved within the organization's internal framework.

Arrangements by which mutual parties gather for mutual benefit (or are tied together to achieve a specific task) do not rise to the definition of a partnership for this study. Rather, shared resources, risk, or accountability must be incorporated into the relationship. Within this scope, partnerships are developed over a long period of months

of investment in which meetings and events are held that allow each party to assess the common areas of interest. During this formulation period, a key factor is that each party must assess how the other needs to conduct business, taking into account the institution's corporate culture and being mindful of differences that must be addressed early on.

Ashford (2015) identified core reasons why community colleges and the manufacturing sector have formulated partnerships to gain an edge in accessing additional federal funding. Additionally, a plan to shore up resources in job growth industries by demanding that those jobs be met creates an excellent argument to receive additional funding. Within each of these examples, core principles of sharing resources, risk, and accountability must be evaluated to determine whether the partnership will be effective and sustainable over the long term. As the number of partnerships grows for colleges over the next decade, the creation and sustainability of effective partnerships must be analyzed, assessed, and disseminated to ensure the efficient use of resources.

University and Industry Partnerships

Major universities have collaborated with businesses and industries for decades, using billions of sponsored research dollars from the federal government. More than \$40 billion annually have been distributed to universities to support research that builds the solid foundation of why businesses are so readily willing to partner: they want to share in the government investments (Weigley & Hess, 2013). The collaborations are more formalized with most universities using a technology transfer office within the organization. This office manages the agreements that are related to items such as distribution of royalties, licenses, and other related partnership components. Ultimately, this office supports the path of research that moves into production within the relevant

industry. The partnerships with universities and industries have provided amazing contributions to the American society.

As the American economy rode through the 2009 recession, universities were hit with lower funding through sequestration and industries needed to scale back on their research investment. Blumenstyk (2011) discussed how Vanderbilt University partnered with Janssen Pharmaceuticals to develop schizophrenia drugs that could net the university more than \$100 million in future profit that would be related to the sale of the pharmaceuticals. The public was concerned that Vanderbilt had overstepped its mission by partnering and sharing in industry profits. Vanderbilt rebutted that the research it was doing would prepare its students to integrate successfully into industry. In the case of this particular drug, the pharmaceutical companies had deemed it “not druggable,” meaning they would not have invested in this research on their own. The partnership allowed Vanderbilt, which intended to conduct the research regardless of the marketability, to partner with Janssen, essentially to share the risk of allowing the drug to be marketed commercially.

The Community College Opportunity

Community colleges are not blessed with a large federal stream of sponsored research dollars, as are their counterparts; however, several common themes can be applied to partnerships to industry. Community colleges have created several important assets that local industries, if they were educated about them, would find valuable and similar to the research that university partnerships provide for the pharmaceutical industry. Ample classrooms, real estate, and training labs—equipped with high-end,

technical equipment—could be used by industries that have had to cut these assets out of their lean budgets.

Ullman (2012a) provided an example of an innovative partnership venture that Central Piedmont Community College (CPCC) offered to Family Dollar. Warehousing safety had become a major concern within Family Dollar, and CPCC was able to define specific forklift training that resulted in Family Dollar's safety record increasing from 85% to 98%. Another benefit that CPCC accrued was a substantial foundation gift provided by Family Dollar's chief executive officer (CEO) as an appreciation for this safety turnaround. As with universities, community colleges could provide the use of assets and tailored services to local industries, which could add significant value to the businesses and local economy. One of the key elements for these types of partnerships must be the sustainability of the partnership over time, which the leaders of the organizations must spearhead.

Leadership

At the heart of effective partnerships are strong leaders with common characteristics to create and nurture sustainable relationships. Achieving the Dream and the Aspen Institute (2013) outlined five traits that indicated the way that successful higher education leaders were able to achieve a high level of success within the organizations. Three of the five characteristics centered on the ability of leaders to take calculated risks, to develop essential external relationships, and to pursue creative ways to bring new resources to the organization. These characteristics will be extremely important for leaders to use within the context of the creation, maintenance, and evaluation of external partnerships with industry. Common ideas and goals can begin a

partnership; however, it takes strong leaders who possess these mentioned skillsets to ensure long-term success.

The American Association of Community Colleges (AACC, 2013) produced a detailed set of competencies for effective leaders in higher education. In the second edition of this report, the AACC created a path, starting with emerging leaders, working through newly hired presidents, and finishing by discussing leaders who have been in their positions for longer than three years. Common themes that emerged from the Aspen Institute (2013) and AACC (2013) reports were that leaders should adopt an entrepreneurial spirit with calculated risk taking, even in situations that might disrupt the traditional college environment. Another prominent point in the reports was that a leader should be able to navigate external relationships and cultivate alternative resources as crucial elements for a successful future higher education leader.

In the corporate world, Reed (2012) described how Alan Mulally, CEO of the Ford Motor Corporation, drove effective change within Ford by using transparent data that created accountability metrics, celebrated the discovery of problems, and got as many people as possible involved in the vision. In the eyes of Mulally, a vision without implementation was worthless. The other major emphasis was to ensure that the staff at Ford would understand the importance of their role in the process and to ensure that they would feel tied to the success of the company.

Although some themes are common between the corporate and higher education worlds regarding leadership and the development and maintenance of relationships, one should also understand that major differences do exist. A review of those differences was conducted to determine how they would affect future partnerships between business and higher education. One notable difference between the Ford Motor Company and higher

education was the ease with which Mulally encouraged his staff to bring up problems. The tradition-laden community college tends to shy away from those issues because staff members are usually reluctant to bring problems to their leaders.

In future collaborations between community colleges and businesses, the leaders certainly will need to understand the various leadership components under which their organizations operate. Understanding the boundaries and corporate cultures of each organization within the partnership can provide long-term structure to eliminate common misunderstandings. When a shared approach is used in how decisions and actions affect each organization, long-term success for both parties will be more likely.

Community College Programmatic Issues

Curriculum alignment with the globally competitive economy poses major challenges to educators in ensuring that the proper skills are being taught in the classroom. Business needs have increasingly accelerated in this economy, which creates a complex dilemma for education in understanding those changes and having the resources to create and assess quickly the effectiveness of those changes to its curriculum. Significant challenges also occur in getting industry to articulate its issues. Even within certain industries, company differences in what is important or required can vary dramatically, causing more complexity when creating curriculum. Additionally, with ever-changing skill sets, the colleges might not have the facilities or equipment to handle the new requirements.

The pressures of teaching and assessing current program offerings fully occupy community college instructional leaders; therefore, adding new programs or keeping programs flexible can be challenging. Unfortunately, if colleges are not engaged in the

local economy, local businesses might be consumed by global competitiveness, and might relocate or shut down because of a lack of qualified talent (Gordon, 2009a).

Gordon (2009b) and Cappelli (2015) described the inability of businesses to hire people for highly skilled technical positions. Since the 2009 recession, unemployment rates have dropped, but companies must now create their own apprenticeship training programs to make the applicants employable. For example, in 2011, Siemens in South Carolina launched the Nation's largest gas turbine plant. To staff 800 highly skilled positions within the facility, Siemens identified noncollege-track students in high school, provided them part-time jobs, and paid them to attend CPCC for two years (Hirsh & Johnson, 2011). The only way that the company would be able to resolve its talent issue was to bring both the education and training of those employees back inside Siemens. In previous decades, Anderson and Holmes (1995) documented how the "big three" automobile companies developed significant apprenticeship programs within the corporate organizations to handle the required skill set development. Unfortunately, most organizations today do not have the fiscal capacity to launch such education and training efforts.

Without the fiscal resources to develop and update the curriculum continually, it is conceivable that Sieman's 800 jobs would not have materialized in South Carolina, and that the power plant would have been located in another state or country. Fortunately, for South Carolina, Siemens took the initiative. Gordon (2009a) described the need for communities, businesses, and the local college to integrate resources closely to ensure that the economy could prosper and grow in a marketplace that would be quickly evolving with technology and global competition. A key component to technical training in community colleges is creating an educational curriculum and materials that are as

close to the real job experience as possible. Torraco (2008) studied planners of experiential learning opportunities who had to combine competencies and job requirements, as well as the ability to incorporate a “real world” experience via campus simulation or at an industry facility. Nevertheless, this type of learning comes with its own set of issues.

Some issues that Torraco (2008) brought up when addressing on-site training through internships were whether the intern had enough to do or whether the company might be so busy that the intern could merely watch while the technician performed the work. In either instance, the preferred method of technician education was to get as close to the employers as possible. Within any partnership between a business and a college, the more flexible the relationship is the greater will be the chance that the student will end up obtaining the required industry skills, thus eliminating one of the major issues of job placement.

Although the efforts of colleges to serve businesses effectively has become increasingly complex, community colleges have also been facing shrinking resources, including unfunded federal and state mandates that take budget allocations away from instructional activities. Colleges need to monitor the business landscape continually to validate that the courses that they are teaching to students is still relevant for their potential employers. Within the higher education environment, accelerated change within programs has historically been fraught with barriers. For example, sometimes, the college has not been able to retain or hire faculty who have the experience or skill sets that are current with the latest trends (Flaherty, 2013).

Financial Paradigm for Michigan Community Colleges

One of the key challenges that Michigan community colleges face is the ability to identify revenue sources outside of the traditional three streams: state appropriations, tuition and fees, and property taxes. The state government in Michigan has not kept pace with inflation on funding community colleges. In fact, the total state appropriations for all 28 colleges reached a high-water mark at \$319 million in 2001, and have since decreased with current funding still not reaching the 2001 total (Michigan Community College NETwork, 2014).

Had the state continued to appropriate funding from 1994 to present according to the Michigan property tax consumer price index, this researcher has projected that Michigan community colleges should have received an additional recurring \$98 million (Michigan Community College NETwork, 2014). To put this information in context, for the 2014–2015 academic year, the addition of those dollars would have resulted in a 32% increase in funding, moving the total allocation for Michigan Community Colleges from \$307 million to more than \$400 million annually. The loss of those dollars to colleges has heavily affected their ability to deliver services and programming to students. As the past 10 years have shown, the state funding will not address the financial shift in which colleges find themselves, and it should only be projected at a flat or minimal increase over the coming years.

Within the revenue source of tuition and fees, a major shift in who is providing the dollars has occurred. The federal government has increased Pell Grant Funding by more than 100% from \$14 billion in 2007 to more than \$33 billion in 2012 (Mullin, 2013). The majority of community colleges have more than 50% of their tuition paid through Pell Grants. With this shift in who pays the majority of tuition, colleges must

also absorb serious impacts (e.g., strict mandates on Title IX [Davies, 2004], Jeanne Clery Act [2012], gainful employment, completion, and overall security on campuses). In planning for a disaster, businesses and homeowners carry insurance and seek to rebuild using these funds. Therefore, the key to such a plan is the third party payer (i.e., the insurance companies); similarly, the federal government plays a major role with colleges in defining the rules and processes for how federal funds are distributed.

Community colleges in general are cautious about raising tuition because of the issue of the \$1.2 trillion dollar student loan debt that has surpassed regular credit card debt (Reschke, 2015). Very little room exists to grow this revenue source in the future with such a looming debt at hand. These issues have a chilling impact on the cost structure of a college's future business model.

Over the past ten years, state and local funding across the country has declined for community colleges. With the recession of 2009, local property taxes declined significantly, and they continue to lag despite the beginnings of an economic recovery. In Michigan, local property taxes compose more than 38% of the funding for community colleges (Michigan Community College Association, 2015a). Dadayan et al. (2012) revealed that the American average for property taxes as a share of total local taxes is 73%. Michigan ranks as one of the states with the highest property tax rate, relying on more than 90% of these funds. Importantly, the recovery of the funding losses from the 2009 recession will take 10–12 years to restore those lost revenues fully. Nevertheless, colleges must make up for this loss of revenue now, or they must begin to cut programs and services. The major sources of revenue for Michigan community colleges have been so eroded that, if the funding remains flat from year to year, cutting programs and services will be considered a positive alternative. These revenue changes are permanent,

for future increases will not replace the previous lost dollars, and might not even bring them above the current inflation rate.

Community colleges are faced with two sizable cost components that will only exacerbate the troubling picture of future revenue: compliance issues and pension programs. Compliance issues have consumed, in some cases, more than 10% of nonsalaried budgets at colleges and universities (U.S. Senate, 2015). These costs divert resources away from programs and student services towards societal issues that are related to safety, mental health, sexual harassment, and a whole host of other public welfare concerns. The enforcement of federal programs through the Jeanne Clery Act (2012), and Title IX (Davies, 2004), as well as the push to enforce completion rates and regulate gainful employment, has essentially created a growth cost center that continues to escalate. Although no argument has been presented that these issues must be addressed, it is unfortunate that the shift of precious resources into this area further grinds down the ability for colleges to enhance and create new programs because no additional funding is allocated to cover these mandated programs.

Pension programs for Michigan community colleges, run and administered by the state, have billions of unfunded liabilities that will now be recorded on Michigan community college balance sheets. In most cases, the pension liability will make the majority of Michigan community colleges insolvent because they relate to net assets as shown on the balance sheet (Lane, 2014). Although they have very little voice in how the pension defined benefit system operates, Michigan colleges are required by state law to participate in it. Acquiring future capital for Michigan community colleges in the marketplace will be extraordinarily difficult, given these issues.

The future financial paradigm for Michigan community colleges will need to be focused on resource attainment beyond the three major revenue sources. Additionally, it will require colleges to identify new processes to collaborate and partner effectively with businesses and industries to leverage the required job skills for the marketplace. No one, right solution exists to remedy the current unsuccessful business model or to address the number of unfilled, highly skilled jobs that remain open in the current workforce. Leveraging assets—and being open to new delivery methods and other learning styles—must be fully researched to offset this complicated set of circumstances that community colleges in Michigan face.

Current Best Practices for Partnerships

Washbon (2012) concluded that the more integration that would occur between the business world and the classroom, the more effective the programs would be regarding retention and completion. South Carolina has been acknowledged as having excellent best practices in public–private partnerships and as having found ways to overcome the political winds. In using its community college system and its permanently staffed workforce development operations, it has been able to create excellent in-roads by attracting and retaining small and large corporations through programs like Apprenticeship Carolina. This program provides a solid foundational framework for matching unemployed (or underemployed) South Carolina residents with job opportunities in local businesses. South Carolina community colleges provide the training resources necessary for Apprenticeship Carolina to link employers with employees who are trained in the skills necessary for the companies (Washbon, 2012).

Some of the success stories of the collaboration between Apprenticeship Carolina and industry can be seen in its partnerships with BMW (Bayerische Motoren Werke [Bavarian Motor Works]) and the Boeing Company. The statistics related to a more than 9% increase in statewide population since 2000 provides a correlation that people move to where the jobs are. BMW invested more than \$4.6 billion with a 4-million-square-foot complex that created more than 7,000 new jobs since 2009. Boeing located the final assembly plant, costing \$250 million for its new 787 Dreamliner project, adding more than 3,400 new jobs (Labi, 2012).

These projects required very highly skilled, technical training components that needed an apprenticeship model for the delivery of their requirements. The growth in registered apprenticeship programs has increased 567% since 2007, growing from 90 to 600 programs. The number of apprentices in the state rose 891%, growing from 777 to 7,770. These statistics prove that the success of this program has had a major impact on the state's economic condition and the ability to attract employees and companies to relocate to South Carolina (Apprenticeship Carolina, 2015).

Regarding best practices, as Altstadt (2011) had advocated, the Apprenticeship Carolina program provides a linkage between the business world, the community college environment, and a workforce development operation. Altstadt found that programs without these vital links suffered poor retention rates among the employees. This poor retention, in turn, drove a high turnover rate among employers. Altstadt provided a vehicle for how poor working families could rise above the poverty level. Critical to Altstadt's conclusions were well-organized support systems for the working poor that required effective educational services, while receiving a living wage for their skills.

Michigan does not have a centralized community college system like South Carolina, and it uses an ad hoc approach to partnering with industry. It is also important to note that South Carolina, a right-to-work state, has the lowest union membership in the Nation at approximately 2.3% of the working population (Oosting, 2015). Michigan had more than 21% represented by a union; however, that has decreased to 14.5% of the population (Oosting, 2015). The dramatic loss of manufacturing jobs through automation or job movement represents the major reason for this decline in Michigan. Despite the union–nonunion debate, apprenticeship programs create opportunities to address skill gaps that precipitate the ability to create and retain jobs.

Michigan has been more prescriptive in its dealings with business. Each community college looks for its own local industries for partnership opportunities, while the state has provided funding sources from business partners with the community college. One of the programs that have been successful at creating partnerships has been the Michigan New Jobs Training Program (MNJTP; Thiel & Grover, 2013). The program provides incentives for businesses that are increasing their labor to offset Michigan state taxes. These taxes go into a training pool that would be used by the businesses in conjunction with their local community college. Michigan has had other central programs (e.g., Michigan Works) that have tried to coordinate resources statewide to assist displaced workers or career changers. This program, among other central initiatives, has not been as successful as other programs because they were not tied to a community college (Shellenbarger, 2012).

As with any workforce initiative, long-term sustainability is a metric that one must use to measure these programs. Unfortunately, with political changes at the state level every six to eight years, consistency in measuring these partnerships is lacking. In

many cases, partnerships last only as long as the centralized tool is used to entice the business to the community college. Michigan has seen many statewide programs created and later disbanded, in addition to state organizations such as the Michigan Economic Development Corporation that is responsible for overall statewide economic growth.

A good example of a program that the Michigan Economic Development Corporation spearheaded in the late 1990s involved the creation of the Michigan Technological Educational Centers that deliver capital funding provided to community colleges to build facilities, develop curriculum, and develop contracted training for business and industry. The prescribed procedures required community colleges to separate their educational curriculum from these centers. The administrators who chartered these centers left office, and the program “morphed” out of existence. In the end, the community colleges who participated in the program received mainly funding for the building.

The community college system in Michigan is based on a more entrepreneurial approach that allows local control so that the colleges can dictate how relationships and initiatives will drive partnerships with business and industry. Lorenzo (2013) espoused the need for colleges to make the necessary connections within their communities so that they could interface with business. Additionally, Lorenzo believed that they must completely understand the community’s current skill capacity and its ability to advance those talents to meet the needs of the businesses.

Best practices must be researched in states such as South Carolina and Michigan to understand environments that tightly integrate industry needs with the academic environment. Even with disparate states, common denominators should be used to bridge

the gap successfully between industry and academia. This researcher's study was concentrated on colleges in Michigan with a specific focus on Schoolcraft College.

Schoolcraft College Profile

Schoolcraft College (2014a) is a comprehensive, public, community college serving approximately 32,000 learners each year: 19,000 through credit instruction and 13,000 through continuing education and business training. The annual budget for the College is roughly \$100 million, and the College employs more than 2,200 individuals annually, including 400 full-time staff (Schoolcraft College, 2014b). Schoolcraft College has an elected board of trustees that provides oversight for the institution and is responsible for hiring the president and approving the overall budget for the organization.

Schoolcraft College is recognized for producing graduates who are sought by industry and transfer institutions. The College ranks as the number one college in Michigan in both graduation and transfer rates to institutions at 61%, which rivals those of university completion rates (College Navigator, 2015). The College is a continuously improving enterprise and a hub of high technology, innovation, and economic development.

The campus is located in southeast Michigan in a suburban setting close to three major expressways, making it accessible for residents throughout metropolitan Detroit and Ann Arbor. The Public Safety Training Complex is also in Livonia near I-96. The Radcliff Center is located in Garden City. Schoolcraft College (2015) offers classes, certificate programs, and associate degrees in more than 70 different majors.

Schoolcraft College Experience with Partnerships

Business Development Center. Schoolcraft has a wide offering into the community and industry partners through its various departments. The Schoolcraft Business Development Center (BDC) is responsible for three distinct roles in assisting business and industry: (a) procuring state and government contracts for businesses through counseling and advice, (b) providing customized training for business, and (c) researching and gathering information that will grow and accelerate opportunities for business. The center is attached to the broader Michigan small business development center that can attract more resources statewide. Since the inception of this program, Schoolcraft's BDC has been responsible for assisting businesses and for gaining more than \$1.5 billion of government contracts.

One of the examples of how the BDC works with industry can be highlighted through its interactions with NYX Inc. The BDC assisted NYX to gain training dollars through its participation in the MNJTP, which allowed the College to develop training specifically for NYX staff on plastics technology.

Continuing education. Schoolcraft College has invested heavily in creating a continuing education branch of the College that has two primary goals. The first goal was to act as the incubator for curriculum and training for business and industry. These materials could potentially be turned into credit coursework. The second goal was to incorporate community programs that are distributed to children as young as five years through adults who are retired. Although the BDC is a cost center that assists organizations with funding and training, the continuing education staff is responsible to turn a profit so that it can cover all of its direct and overhead expenses. Curriculum that identifies a wider audience is provided through this department. One example is the

College's foray into plastics and 3D printing. Specific content was provided to multiple industry partners who wanted to send their staff members to the College to get further education in these newly advancing fields.

Occupational instruction. The occupational instruction areas of Schoolcraft College have deep ties to business and industry. Most of the occupational programs have advisory boards that are composed of a cross-selection of local businesses that provide content and feedback on all instructional materials. Continuous discussion occurs on how to leverage the College's and the local businesses' facilities for in-depth training. In some programs such as welding, Schoolcraft instructors double as career counselors. Skilled technicians in this area are in short supply; therefore, students who take their first course are automatically placed into a live employment opportunity.

VisTaTech Conference Center. The College built a conference facility, the VisTaTech Center, on campus to hold meetings for business and industry. It is operated as a profitable center to attract businesses to use the meeting and presentation rooms while the widely known Schoolcraft Culinary Arts program serves them their meals. By holding seminars and information sessions, the College acts as a broker to industries that lack these types of rooms within their corporate headquarters or lack the training and facilitation staff that the College can provide.

Schoolcraft Development Authority. Schoolcraft College also created the Schoolcraft Development Authority (SDA) that operates as a commercial enterprise to leverage college assets for business and industry to increase alternative revenue for the College, while benefiting local businesses. Schoolcraft College is located in the heart of southeast Michigan on approximately 80 acres of prime real estate that was available to be developed for operations outside of the College's direct mission of education. The

SDA worked with local developers to arrange ground leases for the land so that the College would achieve annual payments for those leases. The majority of the leases were developed in the late 1980s and 1990s, and they allowed the land that previously was owned by the College to be turned back into taxable properties that benefited the community both in commerce from the businesses who brought in employees, and from economic activity.

Another major insight reflects the changing economic environment of community colleges by identifying future businesses that not only want to move their operations to the College, but also are interested in other shared services that the College could provide. The goal would be to achieve greater alternative revenue and opportunities for experiential learning for students who could be interacting with businesses that are logistically located on the Livonia campus.

The SDA has also branched out to identify not only land, but also services that exist in the College that could be leveraged for businesses. Two areas in particular are being analyzed for further development. The first area is an Intelligence Operations Center in which the College operates more than 350 closed circuit cameras, which are regularly monitored for security on the three Schoolcraft campuses. Within this center, traffic from social Internet sites such as Twitter, Facebook, Instagram, and LinkedIn is analyzed. The technicians monitor the social media to determine whether any security threats exist or whether any brand management issues can be immediately addressed. Local businesses have expressed interest in using these valuable services in their infrastructure. The second area is access to a colocation data center that the College is designing to assist businesses with disaster recovery and business continuity issues. Both of these areas are direct linkages between the College and local businesses or industries.

Schoolcraft College is a comprehensive institution that reaches out extensively to business and industry through all facets of its operations. With the College's inception in 1961, leadership exemplified forethought in leveraging resources. Early in Schoolcraft's history, the College struggled with obtaining resources for its mission. The early 1980s brought a dramatic change to leadership that not only concentrated on mission, but also on the means by which that mission could be accomplished. Several dynamic moves, involving the creation of the SDA and the BDC, not only encouraged integration with business and industry, but also generated alternative revenue to seed future operational goals and create the backdrop of a business-minded, educationally advanced institution.

The purpose of this study was to identify how partnerships could be formulated, evaluated, and assessed for long-term sustainability, which could be used as a major factor to offset the resource shortages that plague the community college sector and to fill the workforce gaps for local industry. The analysis also focused on how to incorporate these collaborations successfully within the academic curriculum process. In the final component of the study, the researcher analyzed the leadership styles and the characteristics of the individuals involved in these formations and the factors that propel them to be effective. The project was a bounded case study of Schoolcraft College, a comprehensive suburban school that is located in Livonia, Michigan.

Design of Study

In addition to the financial paradigm facing community colleges today and the continued disconnection of trained technicians being able to meet industry job openings (Roelofs, 2014), a significant need also exists to identify successful collaboration parameters for businesses and community colleges. These relationships are a crucial

component to addressing some of the core systematic issues that the researcher has addressed thus far, and they must be studied in a more formalized approach.

The researcher's study will be a bounded case study of Schoolcraft College to determine what core components are needed to create and implement the processes that will further the long-term sustainability of these relationships (Merriam, 1998). Three research questions will be answered as part of the case study:

Research Questions

1. What are the attributes required to create sustainable and effective partnerships?

By identifying key areas that facilitate the creation or maintenance of the relationship, a template of knowledge can be developed to continue to advance these ideas across the organization for the use of internal and external partnerships.

2. How can business and industry partnerships be integrated into academic programs?

The important point to discover through this question is how to incorporate the necessary components involved in partnerships directly into the curriculum design and assessment process.

3. What types of leadership styles are necessary to cultivate these partnerships?

Understanding the traits and characteristics that make partnerships effective will allow leaders to place individuals who possess these skill sets into those collaborative operations for the College.

For each of these research questions, the researcher has provided a more structured framework from which to create, implement, and continue to maintain effective partnerships with business and industry. A more systematic approach across the institution should be developed to replace the current ad-hoc approach to these integrations.

Methodology

In the research plan, the researcher distributed a 14-question, quantitative survey to local business and municipality leaders in the Schoolcraft service area. This area comprises a 50-mile, concentric radius of the main campus in Livonia; therefore, the researcher inquired through the survey questions a general assessment of their interpretations of how the College fits into to the business' world and customer base. The researcher intended the survey instrument to obtain a broad cross section of input. Within the service area, the researcher expected that approximately 85–100 entity leaders would be identified as potential respondents.

From that initial survey, results were quantified and analyzed into industry and municipality sectors. With the results, a minimum of five qualitative, in-depth interviews would take place with three populations: (a) industry leaders, (b) academic and instructional design leaders, and (c) municipal and chamber of commerce leaders. The purpose of the qualitative interviews was to identify characteristics that external leaders believe are required to create and sustain effective partnerships.

Limitations

Although Schoolcraft College is a comprehensive institution, it might not allow all of the research gathered at this institution to translate to a wider community college audience. In addition, the Michigan economy is heavily centralized in the automotive area, which might bias some of the results. There was an acknowledged slant towards capturing insight from business and industry. A set of qualitative interviews identified an academic perspective, but the main thrust of the study was towards the viewpoint of business and industry. Finally, the researcher has a bias because he is a six-year employee

of Schoolcraft College and has been instrumental in building the College's partnerships in his role as vice president (VP) and chief financial officer (CFO).

Definition of Terms

Academic consultancy is when industry brings real, work issues to a college or university classroom for solutions and receives interchange from faculty and students.

Apprenticeships are “methods in which trainees learn a craft or trade by hands-on experience while working with a skilled worker in an organized program usually created by a company” (Lerman, 2010).

The CLERY Act, also known as the Jeanne Clery Act, is “a consumer protection law passed in 1990 that requires all colleges and universities who receive federal funding to share information about crime on campus and their efforts to improve campus safety as well as inform the public of crime in or around campus” (Jeanne Clery Act, 2012).

Competencies are the “combination of observable and measurable knowledge, skills, abilities, and personal attributes that contribute to enhanced employee performance and ultimately result in organizational success” (Dictionary.com, n.d.).

Custom contract training means that the college, in conjunction with an organization, jointly determines training requirements that are specific to that entity and delivers those required services according to specifications.

DACUM, Developing A Curriculum, “is a process that incorporates the use of a focus group in a facilitated storyboarding process to capture the major duties and related tasks included in an occupation, as well as, the necessary knowledge, skills, and traits” (Baumann et al., 2014).

Entrepreneurial college is “a mindset that the college recognizes liberal arts education has fueled American innovation, thrives on big problems, values both innovation and execution, places culture ahead of structure and encourages partnerships between academic and entrepreneurs” (Thorp & Goldstein, 2010).

Experiential learning is “a method of educating through first-hand experience. Skills, knowledge, and experience are acquired outside of the traditional academic classroom setting, and may include internships, studies abroad, field trips, field research, and service-learning projects” (Kolb, 2014).

Learning collaborative is “an educational approach to teaching and learning that involves groups of students working together to solve a problem, complete a task, or create a product” (Bean, 2011).

A Likert Scale is “a psychological measurement device that is used to gauge attitudes, values, and opinions” (Braunsberger & Gates, 2009).

The MNJTP, Michigan New Jobs Training Program, is “a State of Michigan program, designed as an economic development incentive, which authorizes community colleges to create a training pool to support employers that are creating new jobs and/or expanding operations in Michigan” (Michigan Community College Association, 2015b).

STEM is “an acronym used in education as an interdisciplinary approach to learning where rigorous academic concepts are coupled with real-world lessons as students apply science, technology, engineering, and mathematics in contexts that make connections between school, community, work, and the global enterprise enabling the development of STEM literacy and with it the ability to compete in the new economy” (Tsupros, Kohler, & Hallinen, 2009).

Title IX is an act that states that “no person in the United States shall, on the basis of sex, be excluded from participation in, be denied the benefits of, or be subjected to discrimination under any education program or activity receiving federal financial assistance” (Davies, 2004).

Workforce development is “the coordination of public and private sector policies and programs that provides individuals with the opportunity for a sustainable livelihood and helps organizations [to] achieve exemplary goals, consistent with the societal context” (Jacobs & Hawley, 2008).

Conclusion

A tremendous need exists in the workforce to address unfilled, skilled jobs. Community colleges are struggling with the ability to maintain relevant curriculum and offering students experiential learning opportunities in industry. Partnering with businesses and industries is one major way that community colleges could address both of these core system problems that affect not only local communities, but also the entire American economy. The definition of partnership for this study is a relationship between the college and a business that goes beyond merely entering into joint efforts. The partnership characteristic on which this research will be focused is collaboration in which each party shares resources, risks, and rewards to better each of the partnered organizations.

Higher education partnerships of four-year schools with industry give community colleges some data to analyze and compare. Tremendous differences exist between two-year and four-year schools; nevertheless, the experiences and processes used in the four-year partnerships will provide insight for future community college collaborations. Many

examples of community college partnerships with industry can provide a basis for developing assessments from the data and measurements of those initiatives.

Significant examples of community college and industry partnerships show that apprenticeships have been successfully integrated into the academic curriculum. South Carolina has developed a statewide approach that has definitely been successful in driving business to the state, and in training and retaining employees for those industries. Michigan has also provided a more ad-hoc approach to providing incentives for businesses to work with community colleges; however, the leaders of this effort have taken a hit and miss approach. The major differences between Michigan and South Carolina have been that South Carolina has virtually no unions, while Michigan is yet heavily influenced by union representation. Nevertheless, although the research will be driven in Michigan, the union issue will be brought up in the qualitative interviews to identify whether this issue could be correlated to effects on programs or services, and on the creation and sustainability of partnerships.

One of the driving forces for making this research of partnerships so critical is the bleak forecast for the financial business model of community colleges. Specifically, Michigan community colleges must identify for the future a significant alternative stream of revenue that could sustain and enhance the delivery of experiential learning, while creating and maintaining relevant curriculum. Best practices will be reviewed and assessed for their impact on sustaining effective partnerships with industry. The in-depth research will focus on Schoolcraft College, a comprehensive entrepreneurial institution that provided an excellent case study on the effectiveness of creating and sustaining collaboration partnerships with industry.

CHAPTER 2: LITERATURE REVIEW

Introduction

The discussion in this chapter will center on community colleges and their ability to meet the skill gap that currently exists in the American economy effectively. According to Roelofs (2014), more than 75,000 jobs in Michigan went unfilled; thousands of those jobs were in the advanced manufacturing, health care, and engineering fields. When the view was broadened nationally, this gap now encompassed more than 4.5 million jobs that were available, but not filled (Roelofs, 2014).

The literature in the field will be analyzed through the lens of how partnerships and collaborations with community colleges and industries affect this skill gap problem. An overall review of partnerships within higher education and business will be explored. Leadership qualities and traits in conjunction with the formation and maintenance of these collaborations will also be addressed. Factual data—from the financial paradigm that exists in the community college world related to partnerships—will be tackled to give insight into how the current environment influences the outcomes of the skill gap problem.

Community Colleges and the Need to Address the Skill Gap

More than the past 30 years, community colleges have focused more of their efforts on workforce development, which requires more integration and linkage to

business and industry (Cohen & Brawer, 1996). Cohen and Brawer (1996) emphasized the need to develop skills for the workforce. They also voiced a concern not to develop company-specific training, but to produce material that is broadening and educational for the core skill sets required for an entire industry.

A question has arisen about competing missions within a community college: Can training be effectively managed when general, remedial, occupational, and workforce training is housed within the same institution (Bailey & Averianova, 2000)? Bailey and Averianova (2000) argued that universities continue to add multiple layers of complexity with faculty signing contracts with industry for research projects with very little public reaction to overstepping the boundaries of the universities' missions. In their viewpoint, community colleges have the ability to link together the varied missions of general occupational and workforce training; however, their research indicates that few colleges have successfully integrated these diverse activities.

Bailey and Averianova (2000) speculated that universities have greater fiscal resources than community colleges do to overcome integration hurdles. They also believe that community college partnerships with local businesses potentially provide more value through political support than actual revenues received through the training. This linkage with the businesses provided the college with credibility within the local community and credibility statewide to show how the college has encouraged and potentially strengthened local businesses within the area.

Although a consistent increase has occurred in the past 10 years of workforce development activities at community colleges, little research has identified regarding how effective these efforts have been in achieving economic development (Dougherty & Bakia, 1999). Dougherty and Bakia (1999) also noted the competing missions of general

education and workforce development to be sure that policy makers understood the need to ensure tight integration. Unfortunately, given the shrinking resources picture in community colleges, this need tends to create separate deployments of general education and workforce development, and hardens each of the cultures into negative images of the other (Grubb, Badway, Bell, Bragg, & Russman, 1997). One of the major concerns that Dougherty and Bakia (1999) stressed was to ensure that community colleges do not become merely another training enterprise, but also maintain the ethos of education and that they tightly integrate the workforce components within the educational framework of the college.

One of the terms used to identify the workforce and economic development programs from a community college was “entrepreneurial college” (Grubb et al., 1997). The term is designed to capture the entrepreneurial spirit, the market-oriented focus, and the attentiveness to external organizations. Grubb et al. agreed with the other authors cited in this chapter, that integration of the varying facets of workforce development inside the educational framework of the college is essential to leveraging the organization’s assets. Grubb et al. found instances in which colleges had built separate buildings for its workforce development functions. Symbolically, this gap would create divisions within the organization, but Grubb et al. noted that general educational students also would lose the advantage of experiencing this environment because of the separation.

Another major drawback to the separation of general education from workforce development was having very little spillover of faculty who would teach both general education and workforce development courses. Again, Grubb et al. (1997) indicated that research did not exist to identify whether the functions of workforce development in

conjunction with educational offerings were impactful to the community those colleges served. Another point put forward was the need for policy and governance on projects that were instituted by either state or federal sponsors as they relate to the entrepreneurial college. Within the myopic nature of external organizations (e.g., the state or federal governments), Grubb et al. documented the tendency to focus specifically on job skills to the detriment of a more general approach. One of the shortfalls to overcome was obtaining not only skills, but also the ability to enhance critical thinking to allow for future learning to occur.

Leary (2012) writes that “in 2010, President Barack Obama noted that the Nation’s economic strength depends on the education and skills of its workers, and that a majority of new jobs would require higher education and workforce training” (p. 29). He goes on to say that “Obama signed an act that provides \$2 billion over four years to fund a Community College and Career Training Initiative” (Leary, 2012, p. 30). Community colleges have long played a role as a major collaborator with state and federal governments in workforce development initiatives.

The Job Training Partnership Act (JTPA) of the 1990s allowed community colleges to vie for federal dollars to develop and staff workforce development programs for certain industries (Shaw & Rab, 2003). The JTPA program had very little accountability regarding outcomes. The JTPA funds did allow the community college the freedom to work with industry to create the selected training programs.

The Workforce Investment Act (WIA) of 1998 placed more of an emphasis on the unemployed worker and the future employer. This allowed the college to focus on the specific skill set needed to achieve a quick turnaround so that the hiring process could occur. Community colleges were used more as a conduit in bringing the worker and the

employer together. The performance metrics were geared more to customer satisfaction and hiring rates. Unlike the JTPA, the WIA had significant accountability measures in place for community colleges to report. According to Shaw and Rab (2003), skill training for specific employers took a front seat, and long-term education was not made a priority.

The 2010 Obama announcement for addressing the skills gap funded the creation of the Skills for America's Future operated by the Aspen Institute, which is a private sector-led initiative advocating for workforce development practices and partnerships to address the national workforce skills gap (Leary, 2012). The institute is trying to identify best practices in collaborations and partnerships to provide examples for others to follow.

The theme that this researcher has found with this literature review is that an analysis of how to create effective workforce development programs to eliminate the unfilled jobs in the economy is required. It is clear that no in-depth studies have been conducted on the effectiveness of workforce development in general, but rather examples have been presented of companies that have partnered with business to address specific issues. Another fact is most of the initiatives within the federal and state organizations have continually understood that community colleges are a necessary part of the process to fill these jobs.

Congress has continually advanced the idea of promoting bills that would encourage partnerships and collaborations with community colleges and industry. The latest examples from Senator Franken (Sen. Franken pushes, 2013) and Senator Stabenow (Sen. Stabenow announces, 2013) document this point. Senator Franken's (Sen. Franken pushes, 2013) Community College to Career Fund Act would provide competitive grants to businesses that partner with educational institutions (e.g., community and technical colleges) to train workers for in demand jobs. Senator

Stabenow's (Sen. Stabenow announces, 2013) New Skills for New Jobs Act would provide a federal match to the state training reimbursement from programs such as the MNJTP. Both bills focus efforts on achieving economic success nationally through a well-educated workforce that is receiving training through partnerships between community colleges and local businesses.

Partnership Best Practices in Higher Education and Industry

Community colleges have increased interactions with industry because of three key elements. First, the economic recession has driven colleges to identify other alternative revenue streams. Second, community colleges need to keep current on industry trends and to merge those trends into curriculum to stay relevant. Finally, community colleges and businesses should pool resources (e.g., human capital, facilities, and equipment) to support the required training (Kisker & Carducci, 2003).

Constant communication and the need to address continually common shared goals between the organizations were at the forefront of keeping the partnerships effective. Kisker and Carducci (2003) found that the partnerships were best operated with a separate governance structure that operated outside of either organization. The oversight also relied heavily on individuals from both organizations who could continue to assess and build upon the common shared goals that had originally brought the institutions together.

Additionally, Kisker and Carducci (2003) found that four common types of partnerships had developed between community colleges and industry: (a) customized contracted training, (b) technology and vocational centers, (c) workforce development partners that focused on low-income populations, and (d) business scholarships. Most of

the successes of the partnerships relied heavily on individuals within the community college and the industry partner.

Customized Contract Training

Autocam Corporation, based in Grand Rapids, Michigan, is an automotive supplier that employed more than 1,500 machinists and provides an excellent case study of partnerships that revolve around customized contract training (Drake, 2012). The 2008 recession forced Autocam to cut back workers hours and eventually to limit its ability to invest in its internal apprenticeship program that trained machinists for the heavily skilled specifications required for the automotive industry. As the recession subsided in 2010, Autocam faced a dilemma of increased need for production while facing a shortage of skilled workers because of the lack of internal training during the previous two years (Drake, 2012).

The company partnered with the local community college in Grand Rapids to develop a hybrid approach to training workers on the job via its apprenticeship program. Additionally, the company worked with the college to develop customized, training class time for continued skill development. The driver for this partnership involved the MNJTP that provides state employer taxes to fund training. For the company to receive this financial benefit, it was required to partner with a community college. Autocam continued to have its employees trained via their apprenticeship program four days a week, and then employees attended class at the college on the fifth day (Drake, 2012).

Creation of Centers

The collaboration of both public and private interests to build a \$2 million manufacturing facility in Illinois on the Carl Sandburg College campus revealed another form of partnership (Sundberg, 2002). The college was addressing low enrollments and decreasing property values that affected its financial picture. The Maytag Refrigeration Company was addressing positions that required basic mathematics and English competencies, as well as highly skilled education for technicians.

Prior to constructing the facility, all parties (along with the local chamber of commerce and K–12 officials) visited other training facilities that were located on community college campuses. The takeaway from those visits identified facilities that were separately run by either the business or the community college. A lack of cooperation was noted between the entities during the research. The group felt strongly that a shared governance model between all the parties would be a better way of managing the facility (Sundberg, 2002).

A new entity with its own board of trustees was created between the Sandburg College and the manufacturing community. Although the facility was located on college land, according to the college president, Dr. Lori Sundberg, the fact that the facility is not constrained by operating within district boundaries or by fixed college class schedules gives the facility a flexibility to respond to local manufacturing needs as they arise (Sundberg, 2002). A key point in this case study was that governance structures and operations had to be carefully planned to ensure that expected outcomes could germinate without internal or external constraints that might limit the joint venture (Buettner, Morrison, & Wasicek, 2002; Irlen & Gulluni, 2002; Sundberg, 2002).

Workforce Development for Low Income Populations

Workforce development efforts to assist low-income populations and that garner gainful employment are another collaboration example between community colleges, businesses, and state and federal agencies. The WIA has seen mixed results in its ability to create sustainable employment for the population it has striven to serve. Giloth (2000) found that too often the programs were structured to re-employ individuals immediately back into the workforce without regard to retention and adequate continuous training programs. In a similar study of the WIA, Shaw and Rab (2003) concluded that, as ties between community colleges and businesses tighten, retention rates of low-income workers should rise, as long as structured programs remain in place to continue both training and on the job experiences.

The Seattle Jobs Initiative is an example of a comprehensive workforce development system that brings together community colleges, businesses, city economic development officials, unions, community social service organizations, and other nonprofit entities to support sustainable employment opportunities for the low-income population in and around Seattle (Gibson, 2000). Two years from inception, the program employed more than 1,600 low-income individuals. Prior to entering the program, 60% of the participants earned less than \$9,000. After being placed, their average earnings exceeded \$19,700 (Gibson, 2000).

Some of the key best practices learned from this initiative were as follows (Gibson, 2000):

1. Ensure that the staff in the program has diverse backgrounds.
2. Identify long-term financial support streams of revenue to eliminate stops and starts with the program.

3. Ensure that postemployment training is available.
4. Soft skill training, including English as a second language, is critical.
5. Employer engagement in both curriculum and support services is critical.
6. Employer relationships accepting the program must occur at all levels.

The community college within this partnership acted more often as the classroom component, fostered services through the social service organizations, and collaborated on curriculum with the businesses involved. According to data by the Pew Charitable Trusts, federal funding has surpassed state funding of higher education (Pew Charitable Trusts, 2015). A program, such as the Chicago Workforce Sectoral Program that promotes specific sector occupations, is similar to the Seattle initiative. These types of programs will become a more common template for community college workforce development efforts in the future (Schrock, 2013).

Business Scholarships

A more traditional approach to community college partnerships with businesses involves an industry providing funding for scholarships in areas of need for that organization. This type of engagement is based more often on the development of relationships between the college and the business, while it also identifies shared needs around specific programs. The Spartanburg Area Chamber of Commerce in South Carolina engaged with Spartanburg Technical College to create a pool of dollars that would be used to recruit new businesses to the area (Pelham, 2001). The funds were used to train technicians in manufacturing in the local economy. Local industry participated in the formulation of the curriculum with the college to ensure that the proper skills that the industry needed would be developed locally.

The Dallas County Community College District created a \$30 million Rising Star Fund through its foundation that provides scholarships for academically capable students who are unable to secure funding to attend college (Whiston, 2002). The foundation solicited local businesses and industry for the funds that range from \$100 to \$1,000,000 gifts.

The Antelope Valley Consortium of educators and businesses located in the Los Angeles, Bakersfield, and San Bernardino metro areas of California developed several programs in the science, technology, engineering, and mathematics (STEM) areas to address workforce shortages in those occupations. It was forecast to create 1,000 students in the program; however, at last count, more than 13,000 students have filled the void because of the partnership of educators and business (Walker, 2012). In 2010, in conjunction with the Aspen Institute, Siemens created a similar STEM scholarship fund to address the lack of students entering these programs at the community college level (The Aspen Institute & the Siemens Foundation, 2015).

The common denominator for the scholarship examples involved the community colleges adding value to industry by channeling qualified students in high demand programs such as STEM. Both entities received something of great value, which allowed the partnership to develop and remain sustainable. Another key element centered on the ability to create the relationships dynamically and to continue the communication between the college and the industry partners to address changing market needs over time.

Summary

Each of the four types of partnerships provided case studies that showed opportunistic situations in which the community college or businesses found themselves

compelled to begin a partnership to benefit their respective organizations. Spangler (2002) provided more examples of the types of collaborations than were covered in the best practices section of this research. Spangler outlined in a concluding chapter a series of observations that addressed successful collaborations.

One of the main areas on which the entities focused were the partnerships that clearly articulated both partners needs and expectations of the venture, and continually communicated those needs throughout the length of the endeavor. Another area of focus was to ensure that the bureaucracy of the community college did not negatively affect the operations of the partnership. Flexibility and the ability to adhere to differing organizational missions and styles created another skill set needed to launch and maintain successfully effective partnerships (Spangler, 2002).

The key individual element within the community college is to identify individuals who are problem solvers, who are not afraid to take risks, and who can “roll with the punches” when issues arise or outcomes do not initially materialize. Spangler (2002) believed that more integration of faculty and students into the process might broaden the spectrum that currently resides in the administrative foci.

Effectively Integrating Partnerships Into the Academic Environment

Effective industry partnerships can provide significant benefits to the academic experience for students and faculty. The researcher will discuss several best practice models that describe the pros and cons of partnership impacts to the academic institution. In 1993, the National Science Foundation (NSF) created a vehicle by which the government, industry, and academic institutions could collaborate to address specific workforce skills, while also addressing but not limiting specialized academic priorities in

the STEM, manufacturing, and technology subject areas (Advanced Technological Education [ATE] Central, 2013). ATE projects and centers were established regionally and nationally to address technician education specifically. Other partnership processes (e.g., stakeholder learning collaboratives, academic consultancy services, and specific partnerships with unions and companies) will also be thoroughly examined.

Advanced Technological Education Projects and Centers

Henderson, Fynewever, Petcovic, and Bierema (2012) observed three national ATE centers to identify the impacts that the center had had on the host academic institution. Each of the centers was in existence for at least ten years and the main objectives for the activities centered on curriculum, program, and faculty development. The most commonly referenced direct, local impact involved improving the quality of programs in the targeted technology field.

Alignment of skill sets and industry practices were consistently mentioned as keys to achieving the higher quality curriculum. Another major impact involved creating strong partnerships with industry or professional societies. With those structures in place, the faculty was temporarily employed in industry and visited work sites extensively to broaden their perspective on industry trends. These factors ensured that the curriculum was consistent with current industry practices. Local industry also gained a perspective of the critical need for better teaching practices that allowed gains in productivity through consistent application of the technicians endeavors (Henderson et al., 2012).

The ATE centers also established excellent industry contacts that allowed widespread use of state of the art equipment on the premises of the companies involved in the programs (Henderson et al., 2012). By using the facilities and sharing the faculty in

industry practices, curriculum materials were more advanced than a regular textbook classroom experience could provide. Student growth, through increased enrollment and retention because of richer experiential environments for the students, was also mentioned as a direct solid impact for the collaboration.

Some of the indirect positives centers experienced involved the ability for the host institution to obtain other grants. Some NSF grants are tied to one another, thus the institution that achieves the first grant is in a great position for future funding. Other aspects mentioned were that the infrastructure was set via the ATE grant for applying and complying with grants in general from various sources. Another noted indirect impact was that the host institution enhanced its reputation within the academic world (Henderson et al., 2012).

Although the ATE model was an excellent practice to follow for partnerships, Henderson et al. (2012) found that many program activities were not continued after NSF-ATE funding ended. Institutionalizing the program through the host institution or working with industry partners to continue to develop business models were other ways to continue the process. Identifying core competencies that were created through the existence of the center was another sustainable approach that was mentioned not only in by Henderson et al. (2012), but also by Fiol (2001), Javidan (1998), and Prahalad (1993). The ability to transfer those skills to other program areas within the host institution could allow future resource streams to be developed.

With the more than two million, STEM, workforce opportunities that are expected to open in the not-too-distant future, coupled with business leaders who want to hire workers with the right skills, Ullman (2012b) demonstrated the power of ATE centers to address this major dilemma successfully. The Regional Center for Next Generation

Manufacturing housed at Connecticut Community College in the College of Technology has been challenged with the need to change student's perceptions of manufacturing. This ATE center educates the community and the students that manufacturing is no longer a low-end factory job, but is filled with high-tech simulations that are fluid in their ability to change. Sharing this message with industry, the community, and the host institution is one of the major advantages that ATE centers produce to advertise STEM job openings.

Although ATE centers definitely provide a structured and proven approach to the creation of effective partnerships, the sustainability of those partnerships is an area of concern for host institutions that engage in ATE funding. The core competencies approach is valid and can allow for continued improvement in other host institution programs, however, the real issue remains: What methods of institutionalizing or sustainability of the actual originating programs can occur without future NSF funding?

Stakeholder Learning Collaboratives

Learning collaboratives bring together both educational institutions and industries into small, working communities to achieve quality outcomes. Jacobson (2001) followed innovative Fortune 500 companies (e.g., 3M and Whole Foods) and discovered that smaller work groups within those operations make more of the major decisions for those firms. These companies were considered innovative; therefore, they have grown exponentially. At the same time, Tinto and Love (1995) studied student learning communities at LaGuardia Community College and revealed that students who were placed in cohorts with specific, applied, workforce interests were more likely to continue their education, and found that their experiences were more relevant to industry. Jacobson

(2001) espoused that both communities could interact effectively through programs that consisted of mentoring, volunteering, job shadowing, and curricular involvement.

Moorpark Community College, in Ventura County, California, deployed three, very distinct, learning community cohorts that specialized in health sciences, media arts, and liberal arts and teaching. A key aspect that Jacobson (2001) drove home was that the students in the cohort not only took general education courses, but also took applied technical classes that were connected through their career interests. The curriculum was applied towards the student's industry of interest. Use of the various mentoring and job shadowing programs further reinforced the students desire to further their education and attain their career goals.

Some of the same academic benefits that occurred with the ATE projects now occur in this framework where faculty are immersed in industry and gain current themes to incorporate back to their curricula (Henderson et al., 2012). Although this type of collaborative venture looks promising, limited literature exists to support the ongoing sustainability of this approach. Nevertheless, the examples and research that have been recognized through this effort are timely, and they must be considered as future partnership environments are created.

Academic Consultancy Services

Experiential learning opportunities that give students access to solving industry problems excellently describe consultancy services. Cooke and Williams (2004) identified both Clemson University and the University of North Texas as having structured programs within the academic coursework whereby those institutions acted as real consulting firms to corporate America. Both organizations solicited problems from

industry that could be worked on during the semester with the expectation that a formal proposal for solutions would be derived from a cohort from the respective institutions. Although case studies are popular throughout college curricula McEachern (2001) showed that excellent, written case studies could not be a replacement for students who would be engaged in solving problems that would be real to corporations within such consultancy academic learning.

Clemson University requires industries pay a fee to have their university students tackle a company issue. This arrangement is enticing because it allows the corporation to bring to the fore projects that are not being accomplished by the corporation's current workforce. As industry continues to streamline operations, the scarcity of resources will eventually force projects to be stalled so that they will sit on executives' shelves (McEachern, 2001).

Additionally, corporations benefit by this type of engagement because they are able to identify future employees through a semester-long interview process when the student contributions are reviewed. The sharing of projects also provides faculty with current industry issues that can be integrated into the academic curriculum over time. Furthermore, corporate America has a greater capability to influence curriculum within this type of framework (McEachern, 2001).

The cost to industry is low, but the potential benefits could be outstanding. The advancing technology potentially gives students (in some cases) an ability to use and deploy solutions that industry might never have given a chance if it were not for the naïve nature by which students approach such issues. Students will often spend a great deal of time and effort to reach conclusions that regular industry staff could not afford to spend (Cooke & Williams, 2004).

The consultancy services model shares in the ability to gain faculty access to current industry matters and gives industry an ability to influence future curriculum. Some of the issues that occur in this type of partnership affect the ability to continue from semester to semester with the same organization. It is important that faculty have arrangements with several organizations so that they can spread out the issues and give the corporations a break so that they do not “tap the well” to the point that it no longer adds value. As Cooke and Williams (2004) referenced, faculty must be able to place a framework around the services and, in some cases, identify muddy waters in the how-to-grade effort through the collaborative nature of this process.

Co-op Programs and Union Partnerships

The Global Enterprise Technology Immersion Experience is a new model that leverages synergies between industry and academia. Syracuse University and the University of Delaware partnered with J. P. Morgan Chase to develop an integrated co-op and just-in-time academic model that would allow students the experiential learning, while they would continue to attend college courses (Cameron & Puraio, 2010). The research that Cameron and Puraio (2010) identified as being more advantageous than internships was the ability to combine the work experience, while delivering the educational components during that time, to reinforce the technology fundamentals. The course work was delivered via Cisco telephony to connect the students and the faculty member visually. According to Saltz, Serva, and Heckman (2013), the advantages of the program were the integration of concepts that the class did not merely apply, but also stretched across the entire curriculum. Working and taking classes simultaneously provided an environment in which continuous learning could occur (Saltz, et al., 2013).

Some of the challenges to the program were the logistics of students who needed to pull up roots and to travel to their employer's location. Faculty spent a considerable amount of time ensuring that the real world experiences in which students were required to participate were sufficiently addressed in the classroom. Over time, both universities believe that a scalable level of data will be available to build a more structured framework for future classes.

The general theme of all of the various aspects of the partnerships is to ensure that the faculty has extensive linkages with the world of industry to allow it to update curricula effectively and for students to gain experiential learning so that they can build foundational concepts with what they experience in the work environment. Saltz et al. (2013) measured eight learning outcomes using a pre-internship and a post-internship; all of the post-internship scores were at least 50% higher than the pre-internship scores for all outcomes. Saltz et al. (2013) also believed that the model in place could not only work for information systems, but also could be easily adapted for other fields in manufacturing, engineering, health care, and marketing. The major takeaway from this type of partnership is that classroom simulations, case studies, and laboratory experiments might be a good start. Merging these aspects into the industry work environment is crucial to increasing skill attainment and completion rates.

In 1998, Illinois Valley Community College (IVCC) entered into a unique partnership with the Joint Apprenticeship Training Committee Local 176 that represented the National Electrical Contractors Association and the International Brotherhood of Electrical Workers (Local Union 176). The union wanted to upgrade the talent of their workers by achieving two components from the partnership: an Associate of Applied

Science (AAS) degree and accreditation for their technical training that they were conducting for their members (Allen, 2002).

The partnership consisted of IVCC teaching the general education courses and the Local Union 176 teaching the technical and elective courses that were related to the electrical construction field. Prior to the partnership, workers would have only received their electrical journeyman registration. By entering the partnership, both the certification and the additional AAS degree could then complete the package for workers in this field (Allen, 2002).

So that certification of courses from the Local Union 176 could be recorded into the AAS degree, IVCC hired the union teachers and certified that they met all of the requirements under which the College operated for accreditation purposes. This is another example of aligning the academic curriculum to the field to gain the experiential learning, while maintaining accreditation for higher education purposes.

Financial Implications Involved With Partnerships

A significant debate is ongoing regarding whether community colleges should operate as a business. Wilt (2004) believed that the community college as a social organization had the mission to serve the education and training needs of the community. Wilt stated that this effort frequently required colleges to work with business; however, that did not make the community college one of the businesses. The position that Wilt took was that a business should be setup to maximize financial returns to owners while colleges should exist to educate and train the individual students and the community.

Contrasting Wilt (2004), Birnbaum (2000) stated that management behaviors in community colleges imitate behaviors found in the business sector with economic goals

dominating institutional strategies and actions. Alfred (2012) believed that the community college business model must change by procuring significant private sources of funding. Although to date this ideology has not been endorsed in the higher education community, it is necessary to achieve innovation in an era of shrinking state and local resources.

Business partnerships as an additional revenue source are a major focus of interest for Myran's (2013) push to have colleges achieve a new business and financial model. Myran did not advocate that community colleges merely follow a business strategy, but also favored adopting a more entrepreneurial spirit with risk taking at all levels of the institution to generate new private sources of funding. Another proponent of colleges adopting aggressive entrepreneurial strategies was Zeiss (2003), who proposed that institutions should create 501(c)(3) corporations to allow them to enter the lucrative arena of private enterprise. Zeiss (2003) stressed that it would be important that a college's board of trustees endorse the activities and that an appropriate team of innovators and sales people be placed in charge of this effort.

One of major financial issues involving community colleges partnering with businesses involves the Internal Revenue Service (IRS) tax code and the need to address unrelated business income. Zeiss (2003) described the creation of 501(c)(3) entities to avoid the discussion of unrelated business income; similarly, Hasselback and Clark (1996) described the various exemptions and the history of how colleges and universities had until then avoided any major IRS tax consequences. Although very technical in nature, colleges must be extremely observant in working through the various federal and state statutes under which they operate to ensure that they comply at all levels.

Since the economic recession of 2009, the trend in the literature regarding community college and business partnerships has been focused on identifying and implementing strategies to increase private funding. Most of the authors ascribe to the need to adopt more business-minded approaches and to be more innovative in arrangements with business and industry. Unfortunately, the literature does not address the sustainability of the revenue sources, the pitfalls to avoid, or the mechanisms that would be needed to setup and to operate the partnerships effectively.

Leadership Skills and Environmental Conditions Necessary for Deployment and Sustaining Effective Partnerships

In this section, the researcher will define the various skill sets that are required to create and sustain effective partnerships; this will be done by identifying both business and college reference materials. Within the leadership paradigm discussion, the researcher will also provide a dialogue on the types of conditions or factors that produce successful partnerships.

Hockaday and Puyear (n.d.) presented for the AACC several characteristics regarding possessing a driving force in the development of partnerships to better not only the college, but also the overall community that it serves. The leadership skills centered on the ability to work in a more entrepreneurial setting in which the blueprint was not carved out and in which directions were being developed as the project flowed. The major requirement and aptitude was not only for leaders to be comfortable in a less than predictable setting, but also for them to be confident in their ability to engage positively.

Another integral trait was the capacity to communicate and develop core relationships with business and industry that would go further than the usual philanthropy ideas or merely gathering curriculum insight from business. Austin (2000) developed the

7Cs model for collaboration between business and nonprofits to provide a set of guidelines that could establish partnerships and allow them to flourish. The first and most important C1 was the ability for both partners to make purposeful connections with people. One driving strength in nurturing these endeavors centered on developing emotional and interpersonal bonds with the individuals from both organizations. High passion and abundant energy were definite contributing factors to successfully creating this first essential C1 within the model. The entire foundation of the partnership was how well this core connection was established.

According to Buettner et al. (2002), system-thinking community college leaders who continually identify the partnership holistically as an improved way to serve their constituents will better sustain its effectiveness. One of the key traits that leaders should practice is the art of flexibility and being able to address the impending obstacles that they do not always have the control or ability to change. However, Buettner et al. (2002) noted that leaders lose some autonomy when entering into partnerships for the betterment of their constituents. Shared decision making is a crucial component of effective partnerships, and leaders must develop patience and systems thinking when working through the issues that are related to the operations of the endeavor. Preparation and understanding both organizations' cultures is an important element that leaders must take into account when formulating and deploying the various efforts that are related to the partnership. Ideas that do not mesh with cultures will inevitably stifle progress within the ranks, causing miscommunications and barriers to an effective collaboration (Buettner et al., 2002).

One of the core environmental conditions for partnerships is the establishment of clearly defined roles and responsibilities for each of the members of the collaboration

(Corporate Voices for Working Families, 2012). The Corporate Voice for Working Families (2012) studied these types of partnerships, stressing the need for each organization to understand the others' regulatory issues and critical scheduling times, and to absorb the different language and culture pieces that are unique to each institution.

Communication is the major "linchpin" holding all of these aspects of collaboration in balance so that one of these issues does not slow down the actual projects. A critical piece of data from Corporate Voices for Working Families' (2012) was the need to report on and continually to monitor measurement data on the collaboration to review how the partnership was benefiting both entities. Soares (2010) indicated that, although a significant number of examples of community college business partnerships were available, a great deal yet remained to be learned about the prevalence, common structures, and outcomes of these partnerships. However, Soares said that very little was known about the effectiveness of the innovations, and that rigorous evaluation of the evidence remained scarce.

The Browning, Hatch, and Montes (2015) conducted a case study of the partnership between Virginia Western Community College and Goodwill Industries of the Valleys. Emerging lessons gained from them detailed several factors that would ensure that the collaboration would be effective. Developing a solid foundation of trust and mutual accountability with both entities was a major component to meeting the partnership goals. If one entity were not delivering and were merely receiving benefits, the long-term sustainability of that partnership would be in jeopardy. Leveraging assets from both organizations and continually reporting out the data that would support the benefits for both institutions was strongly recommended.

Soares (2010) found that by communicating and openly sharing mutual successes the partnership would continue to build the strength and commitment of both organizations to support the initiatives. Through the continuous reporting of data, changes in the partnership would be more easily made if one of the entities were not getting what it had expected from the agreement.

Browning et al. (2015) also found that both organizations should have the ability to change their expectations and to use some flexibility as the collaboration was being developed. The last lesson from Browning et al. was that partnerships take time and sustained attention from management to build and maintain the effort. Not only would it take time to develop the social and business relationships, but also those efforts must cycle from the top of the organization all the way down to the individuals within each entity working on the processes necessary for the collaboration to succeed.

Austin (2000) developed a collaboration model of 7Cs to define and measure how well a partnership would work. The first C1 was connection, but the following set of Cs provides an excellent environment to develop, implement, and evaluate collaboration. In addition to C1 connection, Austin's model included C2 clarity of purpose, C3 congruency of entities, C4 creation of added value for both parties, C5 communication at all levels of both organizations, C6 continually learning and adapting to new and fruitful processes, and C7 commitment from all levels for both groups.

A survey of industry and academic leaders revealed that 57% of them believe that partnerships between higher education and business are necessary to deliver higher education to students, while 56% believed that collaboration was necessary during curriculum development (King, 2015). The need for collaborations continues to escalate

as rapid changes in the global workforce place extreme pressure on higher education to catch up, let alone to modify continually its delivery and curriculum.

One of the major themes within the discussion of partnerships is the ability to connect on multiple levels with an organization and its people. Alan Mulally, former CEO of Ford Motor Company, is a leader who has practiced promoting a connection culture and been successful. In 2006, Mulally was able to lead the struggling Ford automaker through 19 consecutive profitable quarters and, by his retirement in 2014, raise its market share in North America (Stallard, Pankau, & Stallard, 2015). Mulally used a shared identity, empathy, and understanding process to reinvent the culture at Ford. The identity was simple and profound: “Ford gives people freedom of mobility.” Mulally used this vision in all aspects of decision making and in the processes that produces vehicles.

The empathy approach that Mulally used centered on ensuring that all partnerships with suppliers, unions, and other organizations were mutually beneficial arrangements. Mulally also focused staff on the power of teams and continually promoted the concept of “One Ford.” Finally, he promoted a continuous sharing of ideas and opinions from staff, and encouraged leaders to share openly the obstacles that they faced in their operations. The skill sets identified with the Ford experience definitely led to a more robust culture of connection in which the staff felt engaged and part of the process (Stallard et al., 2015).

An impending shortage of capable community college leaders is coming in the next decade. The leadership skills required for the future will more likely involve collaboration skills that are related to making tighter relationships that are more effective with business and industry (Strom, Sanchez, & Downey-Schilling, 2011). The types of

collaborative experiences can be learned through internal or external mentoring or through professional development; however, Strom et al. (2011) felt that the best experience would be through the actual development and fulfillment of partnerships that could better deliver education and curriculum. As Soares (2010) declared, the need for partnerships is real; however, the ability to evaluate and assess them using data has yet to be developed. Leadership skills and the ability to promote the correct environment will play a major role in the success of community college and industry partnerships.

Conclusion

The literature review is inundated with major calls for program changes and associated initiatives to address the skills gap problem that affects the United States. Political discussions at the highest levels in the federal government focus on how industries could find qualified workers to fill highly paid, skilled jobs. Of numerous examples, one of the best practices for partnerships and industries is to collaborate. Industry has partnered with community colleges in a multitude of ways; however, a framework of measuring and evaluating the effectiveness of those efforts is yet lacking.

Within the development and creation of partnerships, a critical documented piece was how those linkages interact with the academic programs and services within the community college. Any sustainable partnership would need to document how it had positively affected not only the learning environment for students, but also whether it had provided a curriculum that was current with industry trends. Financial results for either organization are definitely data points that could be assessed for effectiveness. One of the components lacking in the literature is the ability to quantify this data from the community college or the industry partner. Significant issues occur when organizations

jointly combine operations, for one is for-profit while the other is not-for-profit. Most of the literature regarding these issues is contained in the IRS code of regulations, instead of in the partnership case studies. This financial piece is a major component that will impact future partnerships.

Finally, leadership traits play a major role in the success of partnerships with industry. Many sources capture general principles that show how sustainable relationships can occur. However, the ability to link those leadership qualities directly with specific integrations between community colleges and industry is missing. Assessment of partnerships will require a culture of evidence. Data that can be measured and evaluated will be a major component that could add to the literature on this topic. The Schoolcraft College case study will assist in this effort of analyzing data and providing a framework for the ability to identify the attributes that are needed to assess such partnerships across environmental, academic curricular, and leadership realms to contribute positively to the body of work that is currently available.

CHAPTER 3: METHODOLOGY

Introduction

The purpose of this study was to identify how partnerships between community colleges and industry could be formulated, evaluated, and assessed for long-term sustainability so that they could be used as a major factor to offset the resource shortages that plague the community college sector, and to fill the workforce gaps for local industry. A major component of this process was to identify the key elements and conditions that would be necessary to create an environment in which such partnerships could be successful. The analysis was also focused on how to incorporate these collaborations successfully within the academic curriculum process.

A key aspect of these endeavors was to identify how these connections could establish new curricula, promote updated learning deliverables internally, or affect the external constituents of the College. In the final element of the study, the researcher will review the leadership styles and characteristics of the individuals who were involved in these formations that propelled them to be effective. The project is a bounded case study of Schoolcraft College, a comprehensive suburban community college located in Livonia, Michigan.

Research Types

Research Type Introduction

The researcher used a mixed methods approach, according to a case study bound at Schoolcraft College. The researcher began the methodology for the research process for collaborations with an on-line survey given to multiple college constituents to gauge some basic quantitative information related to three areas: (a) staff training and apprenticeship opportunities, (b) use of College facilities to enhance constituent operations, and (c) joint venture arrangements that would benefit both the College and its constituents. The constituents that were covered within this research project entailed business and industry, local municipalities and members of chambers of commerce. Through the survey, the researcher collected thoughts on the topics outlined above, which enabled the researcher to analyze, categorize, and develop the next set of research tools, using intensive interviews to “drill down” into the details that would be more qualitative and that would be needed to document and present the environment as it stands today.

The researcher used a mixed methods (Johnson & Christensen, 2010) approach provided a rich process to cover the environment from a broad set of constituents. The goal was to cover as much ground as possible, using technology to reach out to the vast businesses in the Schoolcraft College service area. The quantitative data from this survey revealed both interest and awareness from the various sectors previously identified. Purposeful sampling was deployed for the quantitative survey. Merriam (2009) defined this type of sampling as selective or subjective, which is a type of nonprobability sampling technique. This type of sampling technique is most advantageous when used in a qualitative research environment.

Research Sampling

The sampling consisted of 85–100 constituents and provided a baseline set of data to estimate the interest level for partnerships and the constituents' awareness of the services and value add propositions that Schoolcraft could provide to them. Once the data was collected and coded, it was projected that a pathway could be developed that would drive the next component of the research, qualitative in-depth interviews. The second phase of interviews was derived from the analysis of the quantitative survey that measured the willingness and interest level in developing collaborations with Schoolcraft College currently or in the future. The survey was intended to provide the areas of interest that the various sectors believed would be critical to their operations, and their willingness to move forward on interacting with the College for mutual gain.

Survey Instrument Analysis

The research design was a quantitative descriptive non-experimental approach; therefore, the outcomes of the survey data were focused on gauging the current attitudes and knowledge of the business sector towards Schoolcraft College as it relates to potential training, facilities usage, and joint ventures. The phenomenon that was researched did not involve manipulation of independent variables. This approach provided the initial investigation to determine which businesses would show interest and which could be further explored. The advantage of using this type of method allowed the researcher to obtain a large amount of information from a large population.

The subjects that participated in the survey had a greater sense of privacy and so might have responded with more honesty. The survey questions were standardized for the various sectors; therefore, research bias was minimized. A potential disadvantage to this

method was that the information was sometimes broad and shallow. However, the design allowed the researcher to gain a quick insight with constituents who had shown higher levels of interest and allowed the researcher to proceed with other research tools to continue to more in-depth studies.

The variables that were measured on the survey tool were a combination of nominal, ordinal, interval, and ratio. The majority of data was ordinal, according to a Likert scale that ranged from *Extremely* to *Not At All*. The ordinal data was coded to provide descriptive statistics and, using Chi-Square, to determine whether a relationship found in a bivariate percentage table could be generalized to the population. Instrument validity refers to the extent to which the instrument measures what it is intended to measure (Vogt, 2007). One of the methods to ensure validity was to ensure that the definitions and terms that were used on the survey tool were commonly understood with the various sectors. An approach to increasing validity was to prototype the survey questions with a pilot sample to modify them as needed, according to the information gained from the pilot. The pilot survey was sent to approximately 10 constituents to ensure that any issues could be corrected prior to the final survey being released.

Stage 1: Quantitative Survey Purpose

Stage 1 of the research plan began with a 14-question, quantitative survey that was distributed to local businesses and municipalities in the Schoolcraft College service area. Through the survey, the researcher made a general assessment of their interpretations of how the College might fit into to the business world and customer base.

The intent of the survey was to obtain as broad a cross section of input as possible, using this instrument. Within the service area, the researcher expected that

approximately 85–100 individuals and companies would be identified as potential respondents. The researcher then called the identified recipients to confirm their participation in the survey. The pre-call assisted in two ways. First, the mere introduction of the actual topic increased the response rate, given that the respondents had more information than merely an unsolicited email in their mailboxes. Second, the respondents were able to determine whether someone else within their organization would be better suited to answer the questions.

Once the quantitative data was analyzed, a series of focused qualitative interview questions was modified, according to the results of the survey. This set of questions was then used in a series of interviews.

Stage 2: Qualitative Interview Purpose

Stage 2 of the research plan began with the initial survey; the results were quantified and analyzed into industry and municipality sectors. With the results thirteen qualitative in-depth interviews took place with three populations: (a) industry, (b) academic and instructional design, and (c) municipal and chamber of commerce leaders. The purpose of the qualitative interviews was to identify the characteristics that external leaders believed would be required to create and sustain effective partnerships. The representatives from each population were selected, according to a combination of (a) size of companies (representative of small, medium, and large), (b) type (e.g., healthcare, municipalities, or automotive), and (c) interest in partnership and collaborative activities.

Population

The target population was local businesses, municipal governments and chamber of commerce groups within a 50-square-mile radius of Schoolcraft College's Livonia Campus at 18600 Haggerty Road, Livonia, MI 48152. The primary participants were leaders or executives in those sectors.

Data Collection Procedures

Quantitative Survey

The prospective survey respondents were identified using the published, Wayne, Oakland, and Washtenaw Equalization property tax receipt databases within the College's service district, and the Schoolcraft College Finance and Business Office's listing of municipal contacts. Approximately 85–100 subjects contributed to the survey and interviews.

The researcher called each prospective survey recipient, requesting his or her willingness to participate in the survey:

Dear _____,

My name is Glenn Cerny and I am a doctoral student at Ferris State University. In the next few weeks, I will be sending out a 14-question electronic survey regarding a general assessment of business, industry, and municipalities interpretations of how a community college fits into to the business' world and customer base, and I am hoping that you will be willing to respond to this short survey. This survey will be a foundation of my dissertation for my doctorate in the Community College Leadership program at Ferris State University.

Your participation in this study is voluntary, which is explained with other details in the informed consent form attached to the survey. When using any information garnered from this survey, I will use pseudonyms for participants and their institutions to protect the anonymity of all participants.

Once all of the phone calls were made and the answers were recorded, the survey was distributed via Survey Monkey only to the recipients who answered in the affirmative.

The survey had 14 questions:

1. Name of company you represent?
2. What type of category best describes your business?
3. Which range best describes the number of employees within your company?
4. What is your company's total amount of dollars allocated for staff development? (Staff development is defined as any dollars for training internally or externally spent on your employees, conferences, and seminars.)
5. On average, how much time does a typical employee spend on training per calendar year?
6. Are there any established industry standards that your company uses in your staff development training?
7. How well do you feel your company's training facilities meet the needs for staff development?
8. How would you rate your knowledge with the academic, continuing education and professional development, and business development programs and services offered at Schoolcraft College?
9. Based on your knowledge of Schoolcraft College, how likely would you be to look to the College to provide staff development and training?
10. If Schoolcraft College had assets your company could leverage, what would be your level of interest in those assets?
11. What would be your level of interests in creating a joint venture with Schoolcraft College?
12. Does your company have or is interested in apprenticeship (on the job training with company specific education) programs?
13. If your answer to Survey Question 12 was *Yes*, what would be your level of interest in creating an apprenticeship program with your company and Schoolcraft College?
14. Please provide any additional comments on your companies training, facility, and asset needs that Schoolcraft College could help you to facilitate?

Qualitative Interviews

The interviewees were selected by taking the initial survey results, and by quantifying and analyzing the results into industry and municipality sectors. The selected interviewees came from the following populations: industry, academic and instructional design, and municipal and chamber of commerce leaders. Selections were also made across varying company sizes, types, and interest in partnership and collaborative activities. A minimum of five interviews was conducted.

The researcher emailed to the selected organizations the Interview Informed Consent Form with the following email:

Dear _____,

Thank you for taking part in the 14-question survey sent out several weeks ago. According to the results, I am interested in following up with you in a face-to-face interview. I would like to ask for 30–45 minutes of your time to speak with you regarding your organization and partnerships with community colleges. I can meet with you at your convenience at your offices or mine, whichever is your preference. With your permission, I will be bringing my transcriptionist along to take hand written notes of our discussion.

Please let me know whether you would be interested in meeting with me. If you are, please read and sign the informed consent form attached and return it to me at cernyg@ferris.edu.

Thank you,

Glenn Cerny

Upon receipt of confirmation and the signed informed consent, a phone call was made to set up specific times and locations of the face-to-face interviews. Once the interview was started, the researcher asked seven interview questions:

1. How do you view community colleges as a source of talent or a potential partner?

2. What are (or would be) your assessment criteria in determining effectiveness of the community college's interaction with your organization?
3. Other than providing graduates, what can community colleges do to strengthen operations within your organization?
4. How do credentialing, competencies, and skill assessment play into staffing plans for your organization?
5. What would be the preferred interaction between your organization and the community college?
6. According to that response, who from the community college, if anyone, do you believe would be the most effective at interacting with your organization?
7. What activities or actions would assist in maintaining a sustainable working relationship between entities?

The transcriptionist took notes during the interview process. Once the transcriptionist had typed the notes on site at Schoolcraft College on the provided computer and equipment, she saved the file on an external drive and turned it in to the researcher. At that time, if any local files existed on the computer they were deleted permanently.

Qualitative Theme Coding Process

The transcribed notes were categorized by sector and given a sequential number that was then coded into a key to identify the information from each of the interviews. An example of the coding process was as follows:

- Sector 1, Sector 2, Sector 3 etc. (each sector had its own letter)
- Key = XXXX – Sector 1

The process of organizing themes into broad categories, and eventually narrowing them down into concepts, and eventually narrowing them into theoretical models was discussed in the works of Ryan and Bernard (2003). Repetition is one component that

tracks how the statements and words can slowly be moved into a pattern of facts that can be applied to the topic that is being discussed.

The researcher used a software tool called Mindjet that allowed hierarchical structures to be built to parse statements from interviews in different “buckets.” The software tool was easily able to group and move patterns around as they became apparent to the researcher. According to Ryan and Bernard, the validity of qualitative data was a concept that depended on the utility of the device that measures it. During the original brainstorming phase of compiling the Mindjet mind map with the raw data, if any outliers existed, they were flagged and discussed separately.

Data Security

Personal information of the respondents was not collected, but only information that pertained to the organization they represented. The respondents’ names were kept confidential and will never be disclosed beyond the researcher. Names were not attached to the survey data while they were being analyzed; instead, pseudonyms were put in place for all companies and municipalities.

Benefits

Community Colleges

Community colleges, including Schoolcraft, rely on solid cooperative relationships with local businesses, industries, and municipalities so that the colleges can provide workforce education and training programs that are relevant and valuable to the communities they serve. This allows local businesses, industries, and municipalities to leverage resources available through the colleges to maximize dwindling resources.

Finally, the connection between the colleges and external partners allows an increased amount of experiential learning opportunities that are currently in short supply.

Businesses

This process made the surrounding businesses more aware of the facilities and services that Schoolcraft College could provide to their organizations. One of the major goals with partnerships is to identify organizations that can collaborate positively and have both the resources and insight into how that can be achieved. The industries will have a better understanding of how colleges fit in their path to add major value to their recruitment process of future employees. Employers will also have a clearer direction on how they can influence curricula and productivity skills through their closer interactions with higher education.

Within the services and facilities at colleges, businesses will better understand how they can use those assets to save them from investing in their training facilities that are rarely used. A more efficient use of scarce resources is one of the major benefits that will transpire through the deployment of effective partnerships. In summary, given the pressures that exist with global competition and shrinking profit margins, effective collaborations with colleges and industry can make significant impacts that positively affect the financial bottom line through enhanced productivity and better deployment through leveraging common shared facilities and services.

Limitation of Study

Although Schoolcraft College is a comprehensive institution, it might not allow all of the research gathered at this institution to translate to a wider community college

audience. In addition, the Michigan economy is heavily centralized in the automotive area, which might have biased some of the results. There will be a slant towards capturing insight from business and industry. A set of qualitative interviews will identify an academic perspective, but the main thrust of the study will be towards the viewpoint of business and industry.

Finally, the researcher is biased because he is a six-year employee of Schoolcraft College, and has been instrumental in building the College's partnerships in his role as VP and CFO. As the VP and CFO of Schoolcraft College, the researcher has numerous contacts among the population that was surveyed and interviewed in this study. The relations are collaborative in nature, including apprenticeships, training opportunities, and rentals of facilities.

Conclusion

The mixed method approach to gathering data on characteristics that external constituents believed were vital to the creation and sustaining of effective partnerships generated excellent data to review. The process of creating a base line of information on the constituents' perceptions of Schoolcraft College through the quantitative survey set up an excellent foundation from which a clear direction materialized to explore further, using qualitative interviews. The process of phoning each of the quantitative survey respondents ahead of receiving the survey was intended to create a higher response rate that would allow for greater segmentation of the various sectors of groups analyzed. The intent for the qualitative interviews was to discover from the constituents' perspectives what they believed were the critical services or relationships that could be established with the College to add value to their operations. The cross section of constituents within

industry, municipalities and chamber of commerce's allowed the potential segmentation of attributes that were important or stressed within each specific sector.

CHAPTER 4: ANALYSIS OF DATA

Introduction

The purpose of this Schoolcraft College case study was to identify the right conditions necessary for the College and local business and industries to produce and deliver timely and relevant curriculum, thereby decreasing the gap of highly skilled jobs going unfilled. The core of the study was to identify key aspects of collaboration between industries and the College that would be sustainable and achievable. Three research questions were centered on (a) identifying effective environmental conditions, (b) understanding academic components needed for industry, and (c) observing and documenting key leadership characteristics that might form and support excellent collaboration interaction.

A 50-mile radius of the College provided the geographical boundaries to select the participants who would receive a 14-question, quantitative survey that would gather data about the constituents' awareness and interest in the services and assets available from the College. A key component of the survey was to establish a base level of awareness among local industry and municipalities of the services the College provides. The researcher compiled a list of 103 participants through the Wayne, Oakland, and Washtenaw Equalization published property tax receipts database within the College's service district and the Schoolcraft College Finance and Business Office's listing of municipal contacts.

The researcher called the participants and provided the details of the research, and requested their participation in the quantitative survey. The participants who responded in the affirmative were sent an electronic survey, powered by Survey Monkey, to the email of their choice. Portions of the population surveyed had some type of connection to Schoolcraft; therefore, the expectation of the measurement was to gauge the level of understanding and motivation to pursue new and continued activities together with the College.

The survey produced 56 responses for a 54% return rate on the instrument. Survey participants selected from a list of U.S. Census Bureau industry classifications to identify their organization's industry. The responses were widely dispersed among the 11 categories, and the selections were streamlined into three classifications: manufacturing, nonmanufacturing, and public administration. Within the Schoolcraft College service region, manufacturing represented a significant population to differentiate from both public administration and other organizations. Figure 1 depicts the results from the survey representing the three industry classifications used for this study.

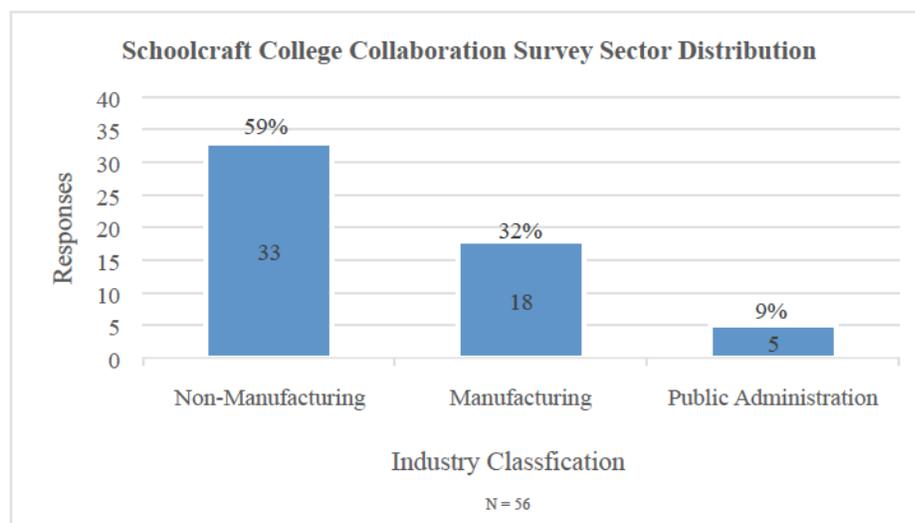


Figure 1. Schoolcraft College Collaboration Survey sector distribution

A second question provided further segmentation of the population by revealing the size of the organization. Figure 2 details the distribution of the size of the responding organizations. The mode or central distribution concentrated on entities that were 49 employees or fewer. An excellent frequency dispersion of sizes was found across all categories.

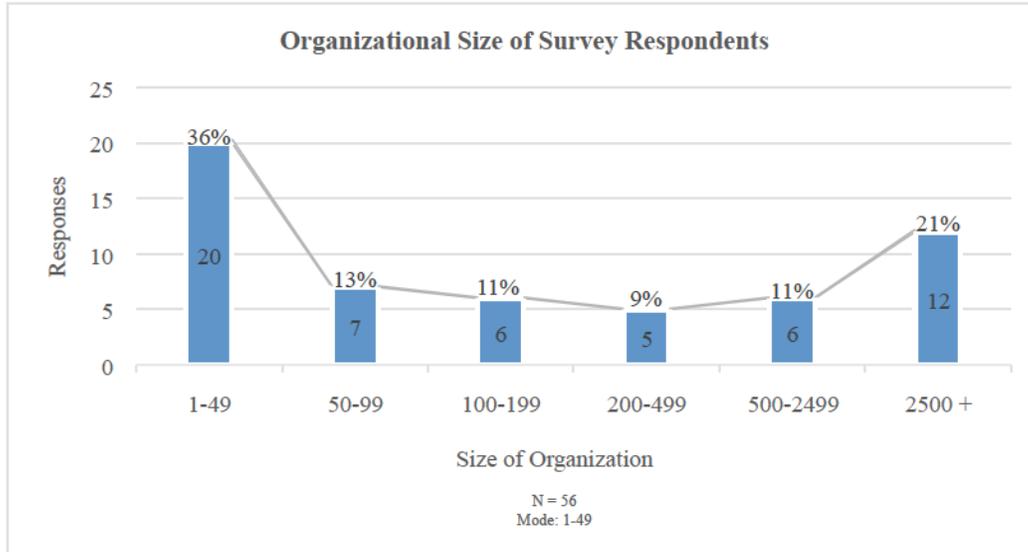


Figure 2. Organizational size of survey respondents

The two demographic components of industry classification and size allowed the researcher to determine whether those attributes created specific responses, depending on the uniqueness of an industry or its potentially difference according to size. To isolate those circumstances, a Chi-Square test was conducted on all of the quantitative survey questions (see Appendix D). A Chi-Square test was performed to determine whether the observed values in the survey differed from the expected values that had been calculated from probabilities.

The Chi-Square analysis describes a null hypothesis in which no significant difference will be found between observed and expected data at a 5% (.05) significance level (Vogt, 2007). To clarify, the independent variable of industry or size did not have

any impact on answers to the survey. If the p values (probability value) were less than .05, the null hypothesis was disproved and something was causing a significant difference between the observed and expected values (Vogt, 2007).

Table 1

Chi-Square Exception 1: Survey Question 4 and Independent Variable Size

Which range best describes the number of employees within your company?							
What is your company's total amount of dollars allocated for staff development? (Staff development is defined as any dollars for training either internally or externally spent on your employees, conferences, seminars etc.)	1-49	50-99	100-199	200-499	500-2499	2500	Grand Total
\$50,000 or greater	1	4	1	4	3	11	24
\$30,000 - \$49,999	0	0	2	1	0	0	3
\$15,000 - \$29,999	2	1	1	0	1	1	6
\$5,000 - \$14,999	11	2	1	0	2	0	16
0 - \$4,999	6	0	1	0	0	0	7
Grand Total	20	7	6	5	6	12	56

Chi Square Analysis							
Survey Values	1-49	50-99	100-199	200-499	500-2499	2500	% of Category
\$50,000 or greater	1	4	1	4	3	11	0.428571429
\$30,000 - \$49,999	0	0	2	1	0	0	0.053571429
\$15,000 - \$29,999	2	1	1	0	1	1	0.107142857
\$5,000 - \$14,999	11	2	1	0	2	0	0.285714286
0 - \$4,999	6	0	1	0	0	0	0.125000000

Expected Values	1-49	50-99	100-199	200-499	500-2499	2500	
\$50,000 or greater	8.57	3.00	2.57	2.14	2.57	5.14	<p>p = 0.00026755 $p < .05$</p>
\$30,000 - \$49,999	1.07	0.38	0.32	0.27	0.32	0.64	
\$15,000 - \$29,999	2.14	0.75	0.64	0.54	0.64	1.29	
\$5,000 - \$14,999	5.71	2.00	1.71	1.43	1.71	3.43	
0 - \$4,999	2.50	0.88	0.75	0.63	0.75	1.50	

The researcher discovered in the Chi-Square analysis that the probability p values were less than .05 in only two exceptions, the first of which is shown in Table 1, documenting the size of an organization and how many nominal dollars it allocates to training, which represented Survey Question 4 in the quantitative survey. In this case, Table 1 reveals a correlation between the size of an entity and how many nominal dollars it can produce for training. The larger the entity, the more dollars could be allocated. This made sense and the Chi-Square analysis noted this, for the p value was .00026755, which

was less than the .05. In this case, the null hypothesis was disproved because a link existed between the size of an entity and the dollars that could be allocated to training.

Table 2

Chi-Square Exception 2: Survey Question 11 and Independent Variable Sector

What Type of Category Best Describes Your Business?					
What would be your level of interest in creating a joint venture with Schoolcraft College?	Manufacturing	Non-Manuf.	Public Admin.	Grand Total	% of Category
Extremely Likely	2	5	0	7	0.125000000
Moderately Likely	7	9	1	17	0.303571429
Not at All	1	6	0	7	0.125000000
Slightly Likely	7	7	0	14	0.250000000
Very Likely	1	6	4	11	0.196428571
Grand Total	18	33	5	56	

Chi Square Analysis				
Survey Values	Manufacturing	Non-Manuf.	Public Admin.	% of Category
Extremely Likely	2	5	0	0.125000000
Moderately Likely	7	9	1	0.303571429
Not at All	1	6	0	0.125000000
Slightly Likely	7	7	0	0.250000000
Very Likely	1	6	4	0.196428571

Expected Values	Manufacturing	Non-Manuf.	Public Admin.
Extremely Likely	2.250000000	4.125000000	0.625000000
Moderately Likely	5.464285714	10.01785714	1.517857143
Not at All	2.250000000	4.125000000	0.625000000
Slightly Likely	4.500000000	8.250000000	1.250000000
Very Likely	3.535714286	6.482142857	0.982142857

p = 0.023778255
p < .05

Table 2 identifies the second exception relating to Survey Question 11, regarding a sector’s interest level in creating a joint venture with Schoolcraft College. The *p* value in Table 2 for the sector Chi-Square analysis was .023778255, which was less than .05. Again, the null hypothesis of sector was independent of answers; therefore, the interest level in joint venture was disproved. A conclusion that could be made is that it did matter which sector was answering this specific question. In further analyzing the data, both manufacturing and nonmanufacturing were similar in observed and expected values; however, it is clear that the public administration sector overwhelmingly was very likely to pursue a joint venture whereas the expected value did not predict this.

A Chi-Square test is limited in that it can identify a relationship, but cannot give much information on the strength of the relationship (Vogt, 2007). According to Vogt

(2007), the test is also sensitive to sample size and small expected frequencies within one or more cells in the table. However, the researcher pursued questioning within the qualitative interview to vet out this insight further with the public administration sector, regarding joint ventures with the College.

What is important to emphasize is that all but two of the questions exhibited any kind of linkage or relationship to the independent variables of sector and size. The size exception related to money spent for training was easily understood and needed no further clarification. The question regarding joint ventures with the College and public administration was further analyzed within the qualitative interviews to provide an understanding of this statistically significant connection.

The second phase of the data collection process consisted of identifying interested survey participants across the three sectors that would be able to provide a greater level of detail regarding their interest in collaboration activities with the College. Qualitative interviews were setup with individuals from manufacturing (three interviews), nonmanufacturing (five interviews), and public administration (three interviews). The number of interviews within each of the sectors was representative of their population sizes in the quantitative survey.

Additionally, two interviews were added in the academic and instructional design area of Schoolcraft College. This allowed the researcher to compare and contrast internal academic views with external constituents. They did not participate in the original survey because of the nature of the externally focused questions. The qualitative interviews consisted of seven questions that were asked of 13 participants, and they were a follow up to the quantitative survey. The length of the interviews was approximately 45 minutes.

The answers were transcribed and coded using a key to identify the various sectors being analyzed.

To maintain the anonymity of the respondents to the interviews an alphanumeric coding scheme was developed. Each industry was assigned a letter sector designation: M to manufacturing, N to nonmanufacturing, P to public administration, and A to academia. A number was also assigned to each interviewee to indicate in which order the interviews took place. The first interview was assigned the number 1, the second interview was assigned the number 2, and so on in numerical order. The 13 interviews were classified as follows: Manufacturing interviews were labeled M1, M2, and M3; the nonmanufacturing interviews are labeled N1, N2, N3, N4, and N5; the public administration were labeled P1, P2, and P3; and the academia interviews were labeled as A1 and A2. All interviews were conducted in February 2016.

The results of the qualitative interviews were placed within a software package called Mindjet, which allowed the researcher a graphical view of the data. This data was then sorted into the four common themes that the researcher had discovered. Each statement or thought was branched out from the four themes and coded according to the interview from which it had been derived. In the case of statements repeated by multiple interviews, multiple codes per branch were recorded.

The four themes that presented themselves from the interviews were effective interaction, use of assets, academic transformation, and expansion of educational focus as shown in Figure 3. The categories presented a cohesive linked process signifying attributes and conditions that had been identified through the qualitative respondents that are the keys to sustainable effective partnerships.

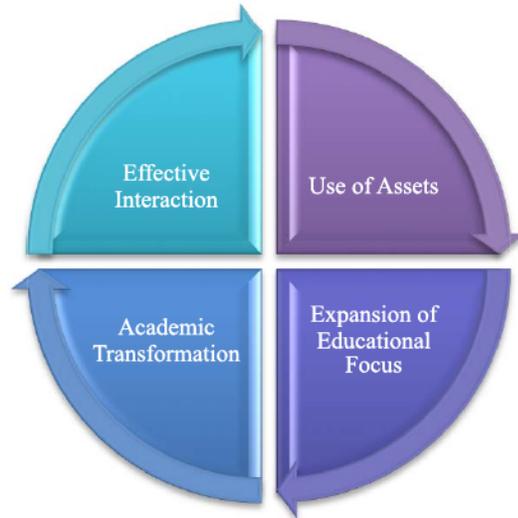


Figure 3. Qualitative interview themes

A thorough discussion and analysis will follow of the quantitative and qualitative surveys to answer in detail the three research questions. The remainder of the chapter is focused on applying the data sets gathered from the surveys to address the research questions:

1. What are the attributes required to create sustainable and effective partnerships?
2. How can business and industry partnerships be integrated into academic programs?
3. What types of leadership styles are necessary to cultivate these partnerships?

Each of these research questions is addressed using the results of the data to allow for a thorough examination of what constitutes the best practices to develop and sustain college and local business and industry partnerships. An expected outcome from this endeavor is the ability to create a stronger more resilient workforce that has been exposed to relevant timely education to address the unfilled highly technical positions that remain in the marketplace today.

Attributes Required to Create Sustainable and Effective Partnerships

In this section, the researcher addresses Research Question 1 that identified the attributes required to create sustainable and effective partnerships. Training was a major asset that community colleges could provide and that resonated with industries. One of the major aspects of training is that companies are devoting time to staff to afford skill enhancement or new skill development. Survey Question 5 on the quantitative survey solicited the amount of time that companies set aside annually for this effort as shown in Figure 4.

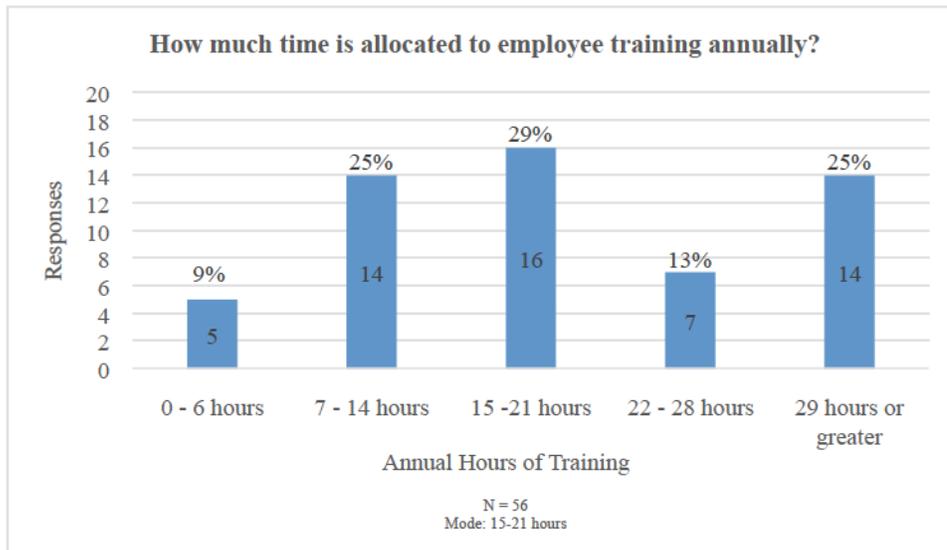


Figure 4. Survey response to amount of time allocated to employee training annually

As can be viewed in Figure 4, the mode of 15–21 hours represents approximately two to three days annually for employee training. Within the frequency distribution, 67% of companies provided at least two to three days. In addition, 38% of the companies exceeded that mode and went on to deliver three or more days of training for its employees, with 25% of respondents saying they actually spent more than four days annually.



Figure 5. Survey respondents interest level in customized workforce training

Companies were also asked whether Schoolcraft College had any assets that the company could leverage, and what would be the company's level of interest in customized workforce training for its employees. Figure 5 shows the results, and the mode of this question was that organizations were *Very Likely* to entertain the College performing customized workforce training. Cumulatively, 77% of the participants responded positively to entertaining the idea of entering into a relationship with the College to perform this type of service.

Survey Questions 8 and 10 were used to inquire about the external company's awareness and interest in three services: (a) academic programming, continuing education, and professional development, (b) business development resources, and (c) conference and training facilities. Universally, awareness was high with modes of *Moderately Likely* to *Highly Likely*, while interest modes were more at the *Very Likely* to levels for those features (see Appendix E for charts specific to Survey Questions 8 and 10). It can be concluded, that the awareness level of what the College could provide in assets and services was at a level consistent with the industries understanding the value

and realizing that the potential to pursue further connections. The interest level confirmed that, if industries were presented with options to use services, they would be willing to move forward on those options.

Establishing awareness of services and the interest level of companies to want to pursue those opportunities was an important foundation to the Schoolcraft College case study. Digging deeper into the type of interactions that were sustainable, the qualitative interview was used to ask direct questions regarding what might constitute an environment that would be advantageous for greater collaboration for both entities.

Theme One: Effective Interaction

One of the major themes derived from the qualitative interviews was effective interaction. As part of that message, industry reported that Schoolcraft College drove interactions via a one-person model as opposed to being institutionally driven. Comments (see Figure 6) centered on “hit or miss” in trying to identify resources or services that entities were trying to procure. A common interview response theme was, “Schoolcraft lacked a sense of integration or participation in the business and industry world in certain programs” (N1, M1, M2, M3, N4, N5).

Figure 6 is a compilation of interview responses that were captured and positioned in a branching organization. Each of the branches shows the interviews from which those comments were derived, using the coding scheme presented earlier to protect anonymity. The branches then move into an organized category, which then rolls up to the effective interaction theme. The “all” code signifies a unanimous comment that was presented in all 13 of the qualitative interviews.

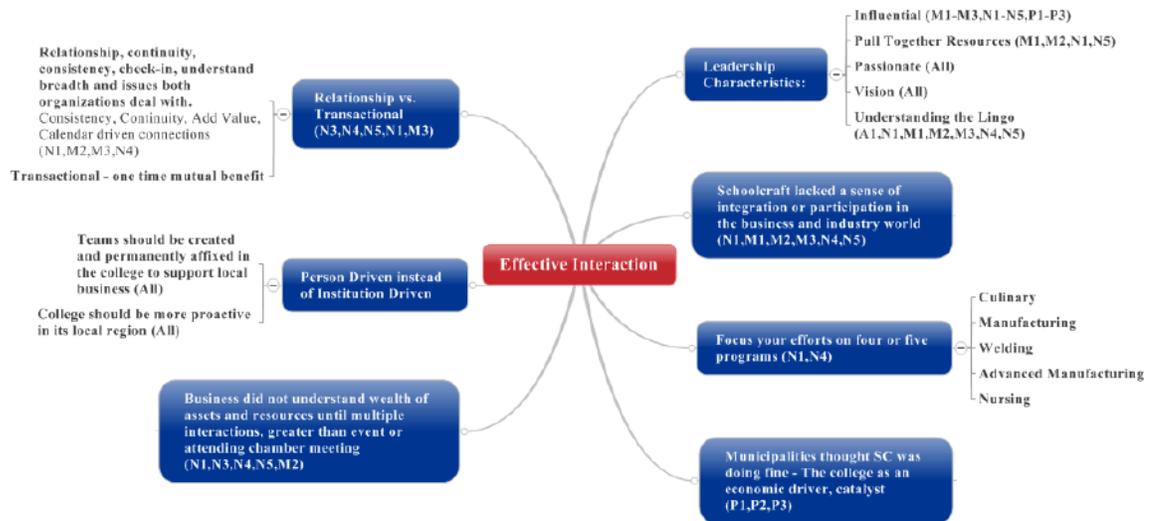


Figure 6. Comments from industry on effective interaction

Academic participant comments showed frustration in not having one area within the College responsible for interacting and working directly with businesses. Academics also brought forward the higher education model of the “siloe” approach to interactions with business; it was evident multiple departments interacted with industries with no structured cohesion inside the College to sustain those endeavors. A universal set of comments from participants (see Figure 6) centered on the College taking a proactive role in establishing contacts in industry that go beyond attending chamber of commerce and advisory board meetings.

Industry wanted continuity, consistency, and value-add solutions in conjunction with one-on-one, regularly scheduled meetings to drive a greater level of connection between the College and the organization. One rationale for these company-specific meetings is that industry operates under different timetables than the College. Several respondents stated in their review of curriculum that the College has very rigid timelines (N1, M2, M3, N4). Industry usually operates with peaks and valleys in its production schedules. The College in the past has tried to force meetings and interactions consistent

with the College's schedule, disregarding the impact or availability of industry. If the College were more attuned to the business needs of its partners, more accommodations and greater input would be achieved, making the connections more sustainable.

Therefore, industries identified two types of interactions and classified each. The first was a transactional connection through which the College and entity worked on a specific item until it concluded. No follow-ups existed and both parties received mutual benefits and moved on. In a transactional interaction, the actual reason for interacting is not to build on the event, but rather to close the agreement and move on. The second, and preferred, connection by industry was a relationship approach that established a team from the College to support and continually drive ideas between the entities, engaging a deeper knowledge base that both organizations would have with each other. Several interviewees went into great detail to explain how critical it was for the College to invest the time into building industry connections to lay a foundation for collaboration (N1, N3, N4, N5, M3). The interviewees recommended that those relationships should be founded on a mutual understanding of the College's and the industry's needs, and on a commitment to building trust and value in future interactions.

The relationship model from industry was continually discussed regarding replacing the one faculty or staff member who was totally dedicated to creating major integrations with industry, but lacked the scalability and cohesion to work back into the College's environment. Comments from industry such as "If you lost so and so, our connection would die at the College" continually surfaced (M2). It was stated several times that, when those College contacts tried to reach back into the College for resources, it was a hit or miss proposition.

Industries believed specifically that colleges have a major stake in affixing teams to support local business (N1, N2, N3, N4, N5, M1, M2, M3, P1, P2, P3). Its rationale stems from the idea that the more highly skilled jobs are available in the local service region, the greater the opportunity will be that the College will recruit, retain, and graduate those students to push them into the local economy. In discussing the team concept, industry was very specific in identifying aspects of what those structures would accomplish.

One of the key features was to have the College focus on specific company needs and learn more about its requirements and industry in general (N1, M2, M3, N4). This learning would require more than the usual advisory board meetings or attendance at chamber of commerce discussions around industry issues, which is the normal mode of operation for community colleges.

Industries stressed that one of the major takeaways from this type of effort was greater collaboration and sharing of resources that would keep curriculum relevant and experiential, and would allow agility and flexibility into the process to capture the ever-changing, high tech, global economy. A comment from a respondent, “The tighter the College is with business, the greater their ability is to address manufacturing’s greatest constraint, development of a highly skilled labor force” (M3).

Industries also made a specific request in the qualitative interviews to discourage the College from spreading itself too thin in trying to delve into areas in industry in which it does not have expertise or resources. The message that was stated was to focus efforts on areas that are strategic in the region and in the College. The value-added mantra that was part of the consistency and continuity message in the effective interaction themes resonated strongly with participants: “Spreading yourself thin is not what we want;

quality value added services is what we're looking for" (N1). Suggestions that Schoolcraft should concentrate on four or five programs were mentioned with the list of suggested areas included in the above Mindjet mind map (see Figure 6), which included culinary arts, manufacturing, welding, advanced manufacturing, and nursing. Industry mentioned the Schoolcraft College Culinary Arts and Nursing programs were already successful, and modeling the other programs to these is what they were looking for.

The in-depth knowledge and attention that is required to develop suitable relationship approaches with specific industry partners was the key point brought up, given the already constrained college resources. The participants stressed that ensuring quality and consistency were at the forefront of the programs and relationships that were considered strategic and core such that they would allow a deeper knowledge base involvement in those companies (N1, M2, M3, N4).

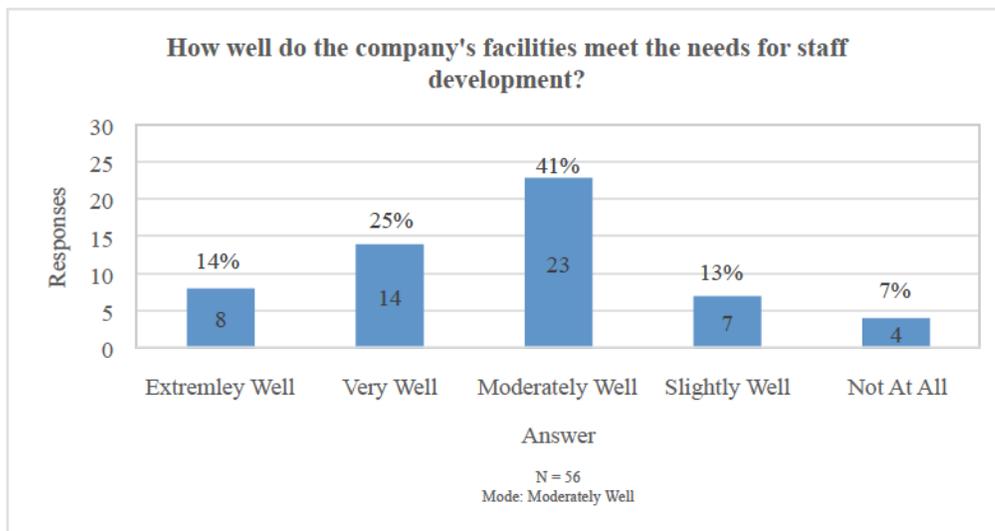


Figure 7. How well do the company's facilities meet the needs for staff development?

Survey Question 7 asked participants to rate their companies' training facilities related to their professional development activities for their staff. Figure 7 outlines the

response rate, the mode indicated *Moderately Well* for companies training facilities, with over 80% believing that their facilities were adequate to meet their staff development.

Another message from the qualitative theme of effective interaction was that businesses did not understand the wealth of assets and resources available to them until multiple interactions and deeper discussions ensued. Potentially, an awareness issue might exist that would require changing the results of the company facility question to whether the relationship with that entity was stronger and more inclusive. Several comments from industries lauded the College for its ability to develop and maintain the state-of-the-art facilities and equipment that would definitely be advantageous for companies to use to train their staffs. The knowledge of these assets was not apparent to industry until a greater number of deeper relationships had taken place.

Theme Two: Utilization of Assets

Another qualitative theme involves the use of assets for the College (see Figure 8). Colleges look to these assets to leverage their use for educational, community, local business, and alternative revenue producing projects. Several of the qualitative participants referenced the College's development of land that is near the I-275 expressway as an excellent catalyst for economic development within the community. Continuation of making those assets available to industry was a major theme that they put forth. Several respondents believed that the continued ability to respond to community needs through leveraging college assets was a major catalyst for economic prosperity in the region (P1, P2, P3, N4).

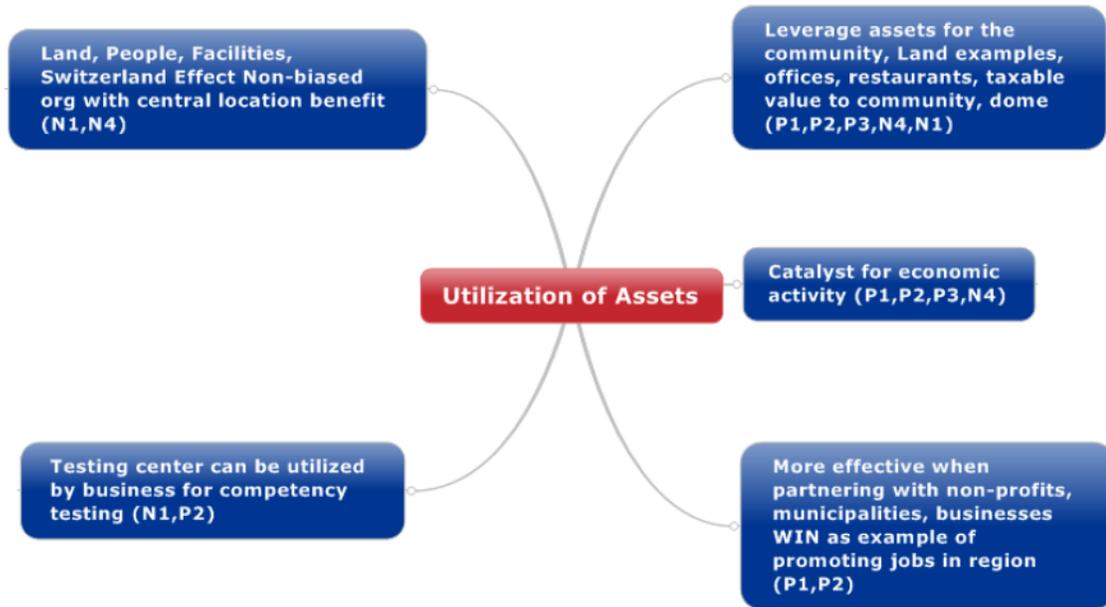


Figure 8. Comments from industry on the use of assets

It was noted that the College could operate as a neutral party by pulling together industries and municipalities to create opportunities that would otherwise not transpire. Given a move to have the College adopt a stronger relationship-driven approach to interactions with industry, participants theorized that more use of college assets would occur with the increased connections. Schoolcraft College has already shown a propensity to leverage assets; therefore, participants felt that those opportunities would continue to grow with greater economic benefit accruing to all parties involved. A respondent commented, “The college can be an objective voice like Switzerland pulling together seminars and industry hot topics to illuminate ideas with their centrally located geography” (N4).

One of the areas on which the researcher wanted to get further clarification regarding the quantitative survey was the linkage between joint venture possibilities and public administration. In bringing this issue up in a follow-up question to this sector, all of the public administration constituents were well aware of the assets that the College

has at its purview. Most of them already had entered into joint ventures in the past with the College or were willing to pursue new joint ventures as a major way to accomplish community goals.

The awareness level of the assets and services were high on the “radar screen” of this sector and the scarcity of resources at their disposal made this idea more attractive to pursue. The information gathered in this section confirms the Chi-Square test result that the public administration sector did have a more favorable reaction to joint ventures than did the other sectors, using the high level of awareness and track record of past experiences (P1, P2, P3, N4).

To summarize the attributes necessary to create sustainable and effective partnerships, establishing a relationship approach with industry that is supported by a team concept within the College is the major theme that arose through the qualitative interviews. With this approach, continuous, consistent, and calendar-driven connections, that would be conducive to industries business plans, would produce an environment that would promote and encourage greater collaboration among colleges and industry. A common theme from respondents was, “Proactive steps by the College to engage in these efforts are some primary steps required to ensure these partnerships develop and flourish” (N4).

It is important that the College stay strategic in focusing on core academic areas that are consistent with local industry need. Spreading out too thinly to try to blanket all industries is unproductive and not a good use of college resources. Quality and thoroughness with core relationships is what the qualitative participants stated that they needed. Elimination of the single point of failure and moving from a person-driven to an

institution-driven team concept to develop and sustain industry relationships was the preferred methodology.

Integration of Business and Industry Partnerships and Academic Programs

Research Question 2 involved understanding how business and industry partnerships integrate into the College’s academic programs. According to the academic qualitative participants, curriculum design and assessment processes continually focus on identifying industry requirements using DACUM, advisory committees, and environmental scans. These processes generate the necessary competencies and skills needed in the industry and flow to what the educational programming will cover. One of the keys to uncovering requirements depends on industry standards.

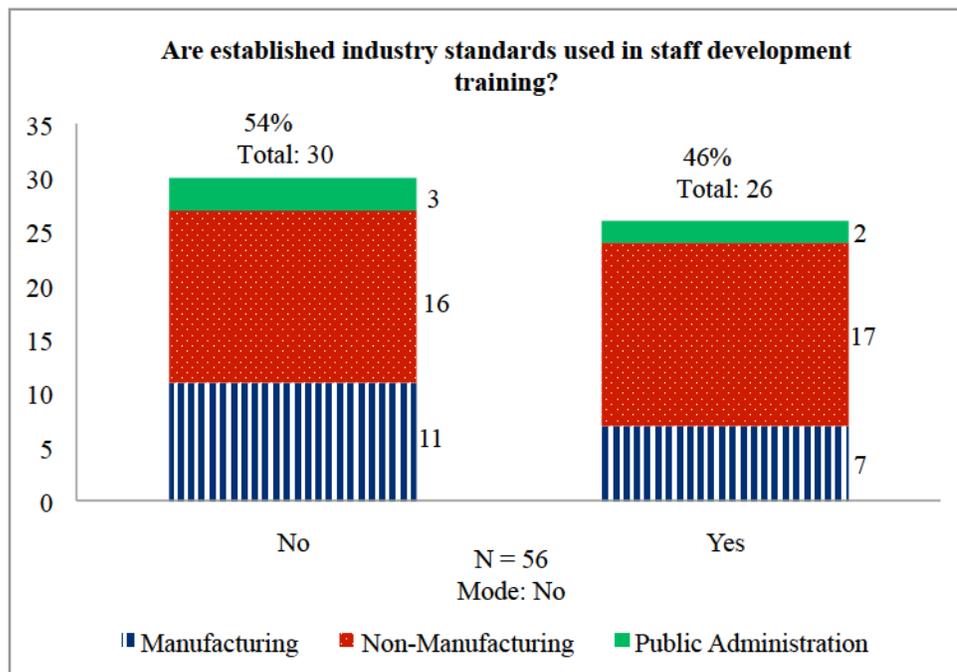


Figure 9. Established industry standards used in staff development training

Survey Question 6 asked participants whether they operate under any industry wide standards. Figure 9 shows that the mode for this question was *No*, with

approximately 54% of the respondents indicating they do not have industry standards. In analyzing the raw data, each of the sectors experienced similar issues with approximately 50% in each of the sectors not having standards to guide training. A major complaint from academic participants in gathering requirements was the inability of industry to spell out its requirements clearly (A1, A2). Through its voice, industry leaders discussed how inadequate the educational processes are (e.g., advisory committees) in generating the needed data to develop relevant curriculum. Both of these contrasting statements will be further analyzed over the course of this section.

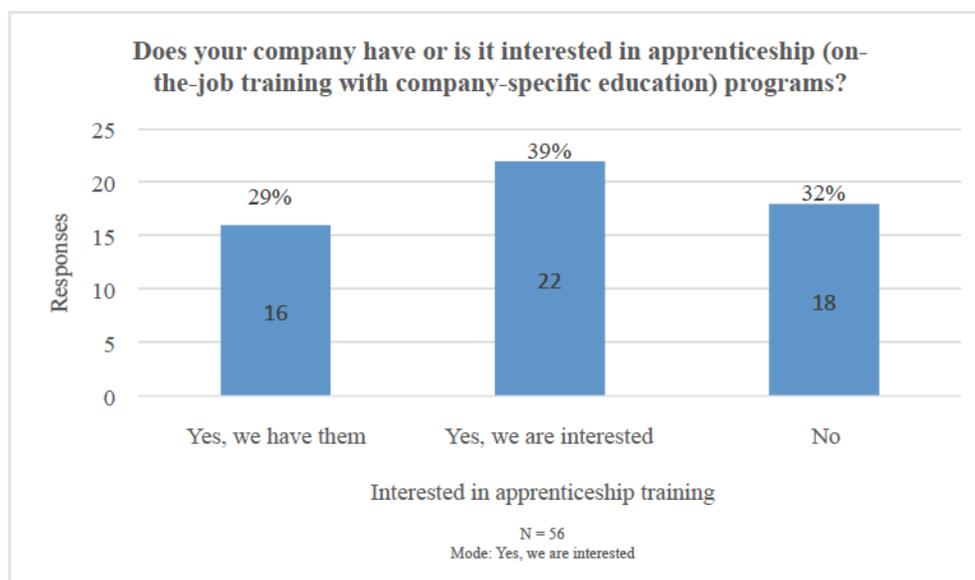


Figure 10. Interest in apprenticeship programs

Experiential learning through apprenticeship programming was another tried and true method to connect industries and colleges together to assist in the skill attainment process. Survey Question 12 inquired about interest level in using apprenticeship training for recruitment and staff development. As seen in Figure 10, the mode answer was *Yes*, the companies are interested, which indicates that significant interest exists in this type of training. Of the respondents, 68% currently deploy an apprenticeship program or were interested in seeking to establish one.

To build on that data, Survey Question 13 asked whether the company would be interested in collaborating with Schoolcraft College in an apprenticeship program. These results (see Figure 11) indicated a mode of *Moderately Interested* in collaborating with Schoolcraft. Cumulatively, 74% of the respondents indicated *Moderately Interested* to *Extremely Interested* in the venture with the College. Again, the “takeaway” from this set of data is that industries were definitely interested in collaborating with the College on joint programs related to staff development.

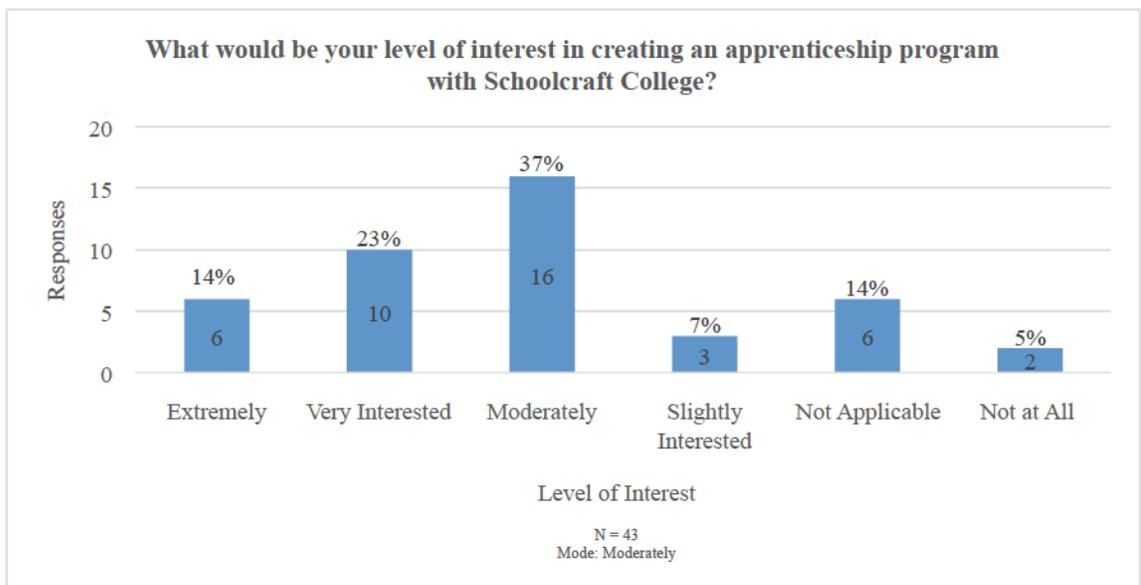


Figure 11. Interest level in creating an apprenticeship with Schoolcraft College

Theme Three: Expansion of Educational Focus

What can be established with the data to this point is that interest in creating programs between the College and industries is sufficiently achieved. A major disconnection remains regarding how to create and deliver the curriculum properly because of the different perspectives of industry and academia as shown in the qualitative interview responses. The academic staff believed that their core competencies curriculum development approach using environmental scans, DACUMS, and advisory committees

is effective for business (A1, A2). Contradicting views existed from industry leaders who believed that those academic methods are rigid, inflexible, and not conducive to current conditions in the workforce (M2, M3). In addition to the issue of the development of curriculum, a major theme emerged with the expansion of the educational focus, which was derived from the interview comments (see Figure 12).

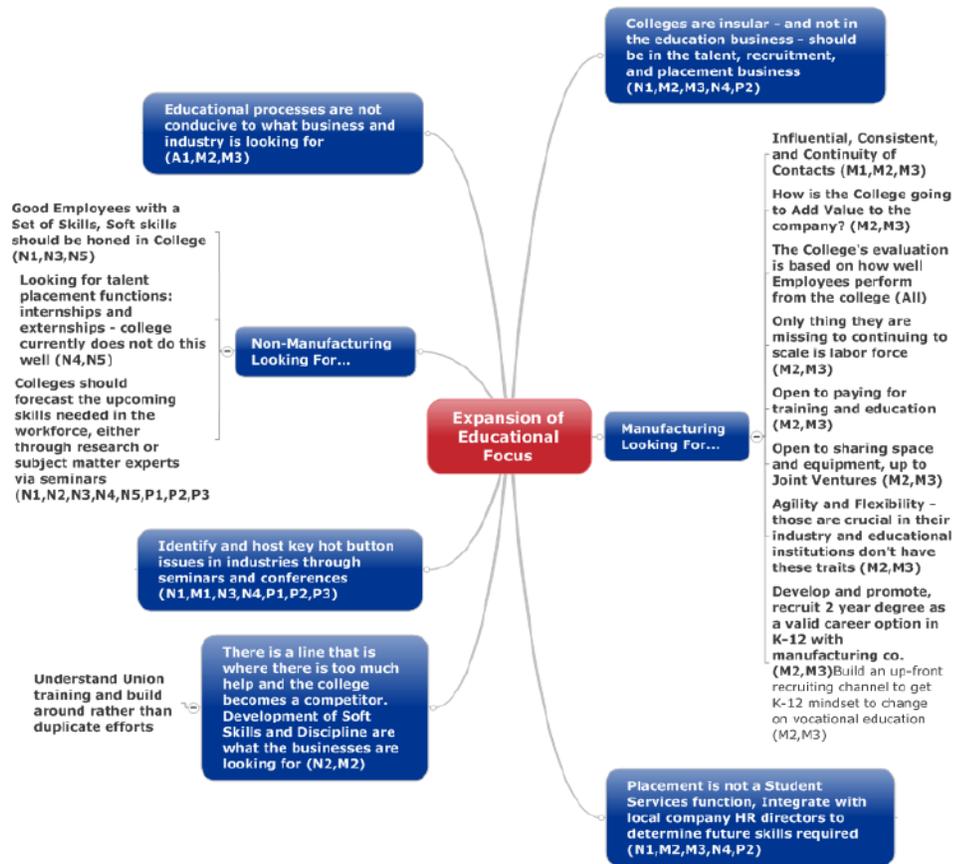


Figure 12. Comments from industry on expansion of educational focus

In a later section, manufacturing and nonmanufacturing will be analyzed regarding their differing views of the methods on which colleges should focus. The one unanimous area of agreement between the two sectors involved the statement that colleges need to be in the talent recruitment and placement business. A definite belief

exists that colleges and the educational sector have become insular in certain applied programs and not able to adopt and stay on top of industry changes for skill development.

Some consensus existed that colleges currently do not do placement well (N1, M2, M3, N4, P2). In obtaining more details regarding the steps that placement services entail, the respondents indicated that they would recommend the College have more interactions with local human resource directors in identifying short- and long-term job openings.

Another example given was related to the College working with nonprofit entities like the Workforce Intelligence Network to assess regional trends in the job market. The respondents believed that the information that could be assimilated with networks (e.g., the Workforce Intelligence Network) could create valuable insight on job trends and resource requirements that could help to prevent skill shortages in local industries in the service region (N1, M2, M3, N4, P2).

The main theme that participants discussed was that the College should open up the educational process and focus on the recruitment and placement of its students. A common evaluation criteria that industry leaders established for the College was to judge them on the quality and consistency of the students whom they employ. The belief of industry participants that is this type of focus on placement would force the College to assess curriculum truly and to be more quick to replace courses or programs that do not meet the current job placement demand (N1, M2, M3, N4, P2).

In addition to requesting that the placement function be a focus for colleges, the nonmanufacturing sector wanted the College to research or to bring in SMEs to forecast the new skills needed in the workforce. The expectation for this effort was that a major emphasis would be placed on current and future trends in the workforce, and that this

intelligence would be incorporated into curriculum design. A corollary was mentioned regarding research universities who might perform high-end studies that might assist industry leaders in new discoveries using their asset base.

Similarly, the College should strive to be a workforce skills expert that could be proactive in addressing those requirements for industry (N3, N4). Another major effort that the nonmanufacturing sector emphasized was internships and externships. The current thought was that the College does not perform this function as well as it should (N4, N5). This theme dovetailed with the College's placement of a greater emphasis on overall job placement functions.

The other theme consisted of making sure that graduates of the College have a full set of soft skills that the College teaches and vets out before those students enter the workforce. An area that surfaced mostly from the nonmanufacturing sector, but in which some overlap existed regarding all three sectors, was the idea that the College should be a host of hot-button issues in various industries through seminars and conferences held at the College. This hosting would link the College's ability to take a neutral position and to have centrally located conference facilities that could draw in regional constituents. All of these efforts were intended to continue to develop and improve connections between industry and the College.

The manufacturing sector leaders focused their efforts on how the College and manufacturing could build and market the recruiting channel for encouraging Kindergarten–Grade 12 (K–12) students to change their mindsets on vocational education. The biggest issue for manufacturing leaders was their inability to find qualified, highly skilled technicians to run their equipment. Industry's only constraint today is labor (M2, M3). With the technology changes in both equipment and processes

from the automotive industry, agility and flexibility of training operate in a 2–3-year cycle before new curriculum must be developed. Manufacturing leaders were willing to engage in joint ventures, share space, share equipment, or fund students’ educations to shore up the gap in a highly skilled labor force (M2, M3).

Theme Four: Academic Transformation

The last theme to be discussed is academic transformation. Academic developers heavily use advisory committees to collect requirements for curriculum. The participants involved in those sessions said that they did not feel committed to the process; therefore, they “pushed” items that might or might not make sense (M3).

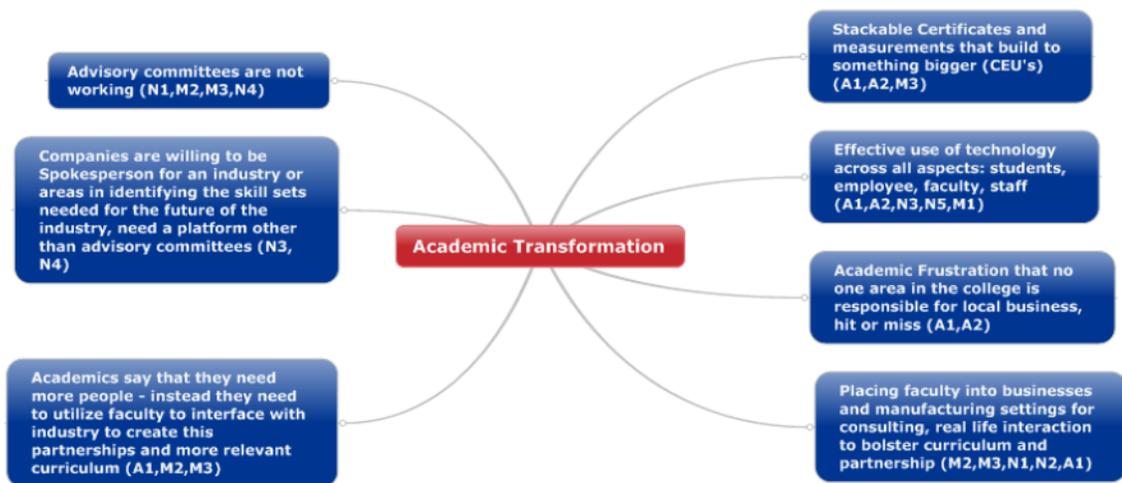


Figure 13. Comments from industry on academic transformation

In conversation with the participants, regarding how to transform academia (see Figure 13), one recommendation was to bring faculty into a business or shop for a month so that they could accomplish requirements in a multitude of fashions. Using the production equipment, while observing real experiential work, would no doubt enhance

the curriculum and design process. Integrating faculty into industry solves several academic concerns that were raised through interviews.

When faculty for applied programs are hired full time, they leave the industry from which they come and some begin to struggle over time with maintaining their expertise in their respective area as it evolves. Industry leaders are willing to collaborate in bringing faculty in to their industries with the promise that all that they might learn would transfer back to the classroom and that future employees would be better trained to “hit the ground running” (A1, N1, N2, M2, M3).

An important distinction needs to be made between applied or career faculty and liberal arts faculty. The statements made by industry within this study were aimed at applied or career faculty teaching subjects in manufacturing, information technology, and business. At some point there might be applications for the liberal arts faculty, but in this study the implications are focused on the applied programs and the faculty that teach them.

Companies were also willing to be spokespersons and SMEs in the process of creating and redesigning curriculum (N3, N4). Several participants raised stackable certificates as a major “win” (A1, A2, M3). With continuing change in workforce duties, the ability to break up skills and competencies into smaller chunks that would build to a larger set of skills or degrees was extremely important to industry leaders.

Leadership Styles Necessary to Cultivate Partnerships

Research Question 3 was focused on the leadership styles, characteristics, and traits necessary to develop, sustain, and continue to expand collaborations with industries and colleges. As seen in Figure 14, respondents identified five major characteristics:

(a) influential, (b) ability to pull together resources, (c) passionate, (d) has a vision, and (e) understands the industry “lingo.”

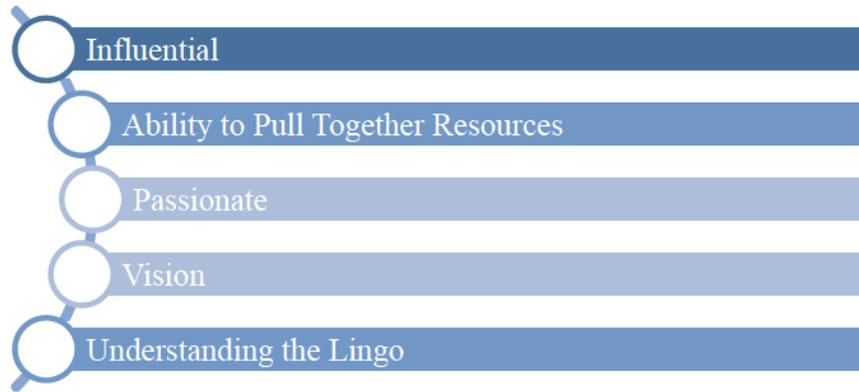


Figure 14. Leadership characteristics

The first characteristic that participants cited was being influential within their college setting. It did not mean they needed to be the president, but they did need to be able to sway opinion and to “move the needle” on resources and deliverables so that action could take place. Another trait that was universal in the process was being passionate and highly motivated to continue to move forward, even when barriers or issues might arise within the environment. All respondents identified the ability of individuals who had collaborative roles such that they could vision past today to focus on pieces of curricula “down the road” and with which they could continue to build on the successes of today. Several comments from respondents referred to the ability of the College to be continually dynamic in responding to core industry problems. The leadership piece that they identified was the willingness to listen, to learn, and then to act to work within the confines of the College’s assets to develop solutions that they could put forward (N1, N5, M1, M2).

Another of the key pieces from the interviews was that a partner should completely understand (as much as possible) the other partner’s “lingo” and business.

More than any other trait, this trait resonated across all of the sectors. The value-add proposition that industry is looking for was brought up in a discussion of the ability of the College leader truly to have an excellent understanding of the industries business and the core issues that it faces (A1, N1, N4, N5, M1, M2, M3).

The issues of differing calendars and scheduling were brought up in interviews addressing the College. Industry leaders operate in a cyclical framework in which they need college leaders to have the crucial knowledge and understanding regarding the “dark out” times when industry is focused on a product launch or retooling its plants (N1, M2, M3, N4). The ability to understand and know the core issues that industry faces is such an advantage for partners who are trying to figure out a “win-win” collaboration.

Anticipating issues that partners will face or “steering clear” of before those circumstances arise is a major trait of a college leader that is valued in industry. A major component was the ability of individuals to gather and use resources in a timely manner to achieve the necessary outcomes. Overall, the individual must be “up front” and forthcoming with information that builds a trust level that can be carried forward into multiple agreements with industry.

Conclusion

Fifty-six respondents completed a 14-question, quantitative survey that measured both interest level and their awareness of Schoolcraft College services and assets available to industry. The survey identified three sectors—manufacturing, nonmanufacturing, and public administration—to gather opinions and to build a base of data from which to create a foundation with which to work. Following the survey, 11 qualitative interviews were conducted across the three sectors and an additional two

interviews were conducted with academic curriculum designers for a total of 13 interviews. Overall, the majority of responses in the quantitative survey revealed *Excellent* awareness of the College's set of services and showed a *Moderate to High* willingness to pursue collaboration activities when it made sense from the businesses standpoint.

The qualitative survey allowed the researcher to "drill deeper" to understand the levels of interest and to uncover issues that might provide barriers or opportunities to effective collaborations. The quantitative and the qualitative data were analyzed by answering the three research questions:

1. What are the attributes required to create sustainable and effective partnerships?
2. How can business and industry partnerships be integrated into academic programs?
3. What types of leadership styles are necessary to cultivate these partnerships?

Four major qualitative themes emerged from the interviews: effective interaction, use of assets, expansion of educational focus, and academic transformation.

The major attributes required to create sustainable partnerships involved eliminating the single-person-driven approach and replacing it with a college team approach to industry, which was derived from the effective interaction set of themes. Focusing more on relationship building and digging deeper to gaining insight and knowledge of the local businesses was a major theme derived from the interviews. Creating a more cohesive set of interactions from the College and moving the "siloes" department contacts into a more holistic approach to serving business was strongly encouraged by the interviews.

The use of assets theme at Schoolcraft College has had great success in the past and will be extensively leveraged in the future to continue to provide excellent coverage for local businesses. One of the directions from industry leaders was to focus interactions strategically with industry so that they would not stretch themselves too thin and not be able to perform quality work. With a strong relationship-driven approach to collaborations, it is expected that curriculum and experiential learning opportunities will be enhanced.

Research Question 2, regarding how to incorporate industry partnerships into academic curricula, was powerfully driven by the expansion of educational focus and academic transformation themes derived from the qualitative interviews. Industry leaders wanted the College to focus on talent transformation of students from recruitment to placement in the workforce. The intent of this direction was to ensure that the College would focus and connect directly to serve the local economy better. The nonmanufacturing sector wanted the College to take a proactive position, identifying new skill requirements for the future with faculty research, and hosting industry seminars on the jobs of the future.

Manufacturing leaders wanted to collaborate with the College to create an awareness campaign in the K–12 arena regarding vocational jobs and how they have been transformed into highly technical, good-paying careers to offset the negative stereotype of low-skilled, last chance employment that abounds in the environment. In the academic transformation theme, industry leaders would like to eliminate advisory committees and provide month-long, consulting opportunities for applied faculty every 2–3 years to work in the business or shop to drive requirements via this methodology, as opposed simply to attending advisory meetings.

Research Question 3 was focused on leadership styles and characteristics that would allow collaborations to develop, flourish, and remain sustainable long into the future. Vision, passion, commitment to learning company “lingo” made up a good majority of what is required to manage these types of endeavors successfully. In the end, the entire basis of creating effective collaborations is to ensure that curriculum is timely and built with real-life experiential opportunities that have been driven by industry requirements through the expansion and continued growth of solid relationships between the College and industry.

CHAPTER 5: FINDINGS, CONCLUSIONS, AND IMPLICATIONS

Introduction

This chapter presents a summary of the study, regarding the development, sustainability and assessment of collaborations with industry and the community college. The researcher focuses the analysis on the findings from Chapter 4 and discusses conclusions, next steps, implications, and recommendations for future research to build upon the material covered in this work.

Summary of the Study

Overview of the Problem

Several systemic issues plague the Michigan local economy and keep it from bouncing back from the great recession of 2009. One of the major problems facing the Michigan economy in 2016 is the scarcity of highly skilled labor to fill good paying jobs. Without jobs being filled, local companies are constrained to grow. Schoolcraft College has faced severe economic consequences resulting from the recession with over 30% decline in property tax revenue, which is a major component of the total budget.

The State of Michigan has severely reduced over-time funding from, at one point, 50% of college revenue to currently just over 15%. These issues are not contained to Michigan, but stretch nationwide as consistent themes. Bringing industries and colleges closer together to address skill gaps and jointly to leverage assets through tighter

relationships could be a solution to some of the systemic issues that plague the country. As McKernan and Hansen (2014) recommended that neither the industries nor the colleges could solve these problems on their own, but that it would take a powerful pooling of the two entities' resources and knowledge to solve these deficiencies.

research institutions have for generations been able to conduct business with industries in an advantageous manner, complimenting both the institution and the commercial industries, which have benefited from combining research. Infrastructure has been created in those universities to support and promote those interactions. Community colleges have not had access to the type of federal research dollars that have supported the creation of those types of structures and have been on their own to create linkages to the business world in a "one-off" approach. The majority of research concerning community college and business collaborations is transaction or location specific, and rarely provides a template from which to copy or build.

The major focus of the study was to identify key aspects of collaboration that are required to occur between industries and the college, and that would allow sustainable integration that would leverage both entities to solve the issues related to the skill gap dilemma and the shortage of college resources to invest in fresh, relevant curriculum. With input from industry and the research obtained from the literature review, the researcher will blend the information into a potential series of conclusions and action steps that not only could be implemented at Schoolcraft College, but also could act as a model for other institutions across the country.

Purpose Statement and Research Questions

Developing an environment conducive to collaborating is a major task within one's organization. To spread this type of methodology outside the organization to industries unlike the College's education business requires a great deal of input and discussion from those constituents. Several layers are of concern when laying the groundwork for collaborations. Research Question 1 was:

1. What are the attributes required to create sustainable and effective partnerships?

Understanding the attributes and key components necessary to enter into sustainable partnerships is critical to ensure that the legwork involved to setup the endeavors is not wasted or broken apart over time. With insight on which pieces need to be uncovered and where time needs to be spent, this should provide an excellent foundation to grow these initiatives.

At the core of the collaboration is the ability for the College to be able to turn that information into improvements in its core business of developing relevant academic programming. Research Question 2 was:

2. How can business and industry partnerships be integrated into academic programs?

Learning how the partnership connection integrates into the curriculum design process is a crucial part for both entities to deliver quality relevant products that address the skill gap problem. The unprecedented level of technological change over the past 10 years, coupled with a competitive global economy, require agility and flexibility that historically has not been a mainstay attribute for educational institutions. Any awareness or competitive advantage that could be gained through collaborations with industry would be a welcome sight for academic curriculum designers.

The final area to cover with collaborations deals with the leadership style and characteristics necessary to develop, sustain, and grow the connections for the benefit of both parties. Research Question 3 was:

3. What types of leadership styles are necessary to cultivate these partnerships?

In the end, regardless of how much technology is thrust into the environment, it is the people involved in the process that will determine success or failure of the endeavors being pursued. Studying what types of styles and personalities are suited for these efforts is crucial to making sure they get off the ground successfully. Communication is always brought up as a common complaint within organizations when deciphering what went wrong; however, it is more likely that traits and characteristics if not observed and understood could break down the process. Getting knowledge about what types of skill sets industries are looking for will definitely be helpful to achieving sustainable partnerships.

By answering the three questions and applying past literature to the problem, the researcher should be able to identify solutions that could be implemented and that would assist in the creation of partnerships. As in building a new chemistry building, a detailed set of plans and requirements must be gathered, assimilated, and distributed for the entity to be able to begin construction. The information gathered from the three research questions will compile a set of blueprints and specifications that will allow the College to enter successfully into these agreements with the goal of sustaining the endeavor over time.

Major Findings

The largest sectors responding were 18 manufacturing companies. Other sectors were less than nine and were combined into a nonmanufacturing category for a total of 33 in that sector. The public administration sector accounted for five responses. The sizes of the companies responding were widely dispersed from a total of employees under 49 to companies of more than 2,500 employees. Companies that had 49 or fewer employees made up the largest response category, accounting for 20 of the 56 responses. Questions about their awareness of the Colleges' services in academic, business development center, continuing professional education, conference facilities, workforce training, and use of assets (e.g., equipment or buildings) were responded to with more than 60% of them being aware of those areas. When asked how willing they would be to use those services, their responses also were in the high 60% range. The first phase of data collection proved that external constituents were at least aware of the services and had a willingness to engage in those products.

The qualitative interviews produced several themes that provided greater detail on what types of attributes would be required to setup partnerships, how the academic integration of curriculum could tie closer to industry, and which leadership traits would be necessary to deploy partnerships successfully. The four themes that presented themselves were effective integration, use of assets, expansion of educational focus, and academic transformation.

Effective Interaction

The effective interaction theme consisted of a core belief among all of the participants in the survey that the College did not have an institution-driven process to

develop and sustain collaborations with industry. It was more a single-person-driven process and a “hit or miss” proposition. According to external constituents, coordination within the College was not clear and it was difficult to identify the “go to” individuals for differing needs. A push to have permanent teams affixed in the institution could be focused on an individual company’s needs and services.

Another major finding from the interviews revealed that industries would much rather have a relationship that would be built with consistency and continuity, would be value-add and calendar-driven, rather than a one-time transactional connection. They further explained that relationships that would be built around spending time becoming aware of each other’s business model, calendar “black out” times, and industry issues would be much more effective than making a deal in which the transaction would be the context of the entire interaction. The calendar issue came up as an example of previous issues industries have had with college schedules not synchronizing with industry schedules.

Industries were not under false pretenses in understanding that these relationships would require extensive resources of time to develop and sustain. They were very clear that the College should only focus on four or five areas according to the College’s expertise and the need in the local region. Industries wanted quality over coverage and did not feel that spreading the College resources too thinly was a good idea.

Another topic that emerged from the effective integration theme was which type of leadership skills would be required to develop, sustain, and grow collaborations. The interviewees were consistent about individuals having a vision and strong passion that would drive people and process forward positively. The individual should have influence within his or her organization and be capable of pulling resources together to achieve

deliverables. Industries wanted individuals who would understand their “lingo.” That the individual would have a keen awareness of the industry and the nuances involved to be able to address and assist in a productive manner was very important to them. The individual would not need to be the president of the organization to operate the program, but he or she ought to have enough authority or responsibility to accomplish commitments that would benefit both parties.

Use of Assets

As industries became more aware of the wealth of assets and resources on the college campus, they reported a greater the likelihood that they would collaborate with the College. A great emphasis was placed on building on the already extensive use of assets in which the College has been involved regarding land development. The industries advocated the use of the conference center to promote events for promoting jobs or other economic catalyst opportunities. The existence of college assets with the expanded relationships with industry would create more demand and use of college assets, bringing more economic value to all parties involved. In some cases, the College was already ahead of the curve by leveraging assets and an industry awareness that became clearer as they dug deeper into learning more about the College.

Expansion of Educational Focus

A major finding from the interviews focused on the industries belief that the College should be in the talent recruitment and placement business. Interviewees from all of the sectors were adamant the College should concentrate on the placement of students into the workforce. The industries believed that local community colleges currently do

not do placement well in certain programs. Several reasons for this problem included that colleges are insular because they stay within the educational realm for ideas and because they are slow to change with the environment that they serve.

The nonmanufacturing sector wanted the College's programs to test and vet all graduates for the ability to exhibit soft skills prior to graduation. The current trend in the economy is that the Millennial Generation lacks the necessary basic skills of arriving to work on time and working with little instruction. A core assessment by industries of how well the College performs includes the question: How well do their graduates work out in the workforce? This sector was also extremely interested in internships and externships. Currently, they do not believe that the College is effective at working these programs. This point is essentially again the placement theme issue. This sector also wanted the College to be proactive in determining which future skill sets would be necessary for jobs that might change because of technology or other environmental conditions. The nonmanufacturing sector felt that the College was staffed with faculty and that their ability to convene seminars and bringing in SMEs provided them an excellent opportunity to address these core needs in this sector.

The manufacturing sector was vociferous in its request to collaborate with the College on promoting aggressive recruiting of K-12 students into the vocational occupations that currently lack a sufficient set of qualified, highly skilled labor. One respondent stated, "We have a generation of students growing up without understanding how critical these high skilled jobs are because of the emphasis on obtaining a degree" (M2). This sector is willing to share equipment, facilities, and fund scholarships to promote and encourage young students to enter the vocational programs that have historically been shunned as last-chance, menial jobs. They believe that the College is a

major vehicle that could be used to change this mindset in the local region. This sector also is quick to add that it needs agile flexible programs that could be adapted to the ever-changing landscape in which they operate.

Academic Transformation

A common issue that industries identified for the academic transformation theme was how ineffective advisory committees would be. What they proposed instead was to invite applied and career faculty into the business or shop environment for an extended period to learn the issues first-hand and to experience the requirements necessary to instill them in the classroom. The interview participants deemed it a consultancy event that could be repeated every two to three years to allow a more agile and flexible method of updating curriculum. Another recommendation from the interviews was the willingness on the part of industry to share in the cost of creating future training and production settings in which both educators and business leaders could meet to leverage the experiential environment for the benefit of both entities.

Findings Related to Literature

Several findings that were related to the literature review are examined. In one of the results, the researcher discusses how the College should affix a permanent team to support the local needs of a core set of strategic programs that the College has identified. According to Dougherty and Bakia (1999), when workforce development structures were isolated from instruction, sustainability of the unit suffered and, ultimately, was not viable. A key to note with this team concept is to make sure to integrate it within the structure of the College so that it does not sit on its own, but rather accentuates what is

already being delivered within the academic, workforce training, or continuing education and professional development departments. Another area of concern that Dougherty and Bakia noted was to ensure that the College would not be turned into simply another training enterprise that would be solely at the service of the industries, and disconnected from learning and research for its own sake.

Grubb et al. (1997) ascribed the willingness of industries to develop and integrate both training and production facilities as being entrepreneurial and innovative. A definite backup exists to this type of thinking, for Grubb et al. (1997) believed that the closer business would be aligned with education, the greater would be the likelihood that the faculty and the curriculum for applied fields would stay relevant.

Cooke and Williams (2004) promoted academic consultancy to push programs that would provide a tight interaction with education and industry. Their findings encouraged faculty to spend time in industries that would be extremely beneficial to the faculty member and his or her ability to add to the curriculum. The consultancy by Cooke and Williams (2004) actually brought industry problems into the classroom so that solutions could be figured out in the educational arena. Moving applied faculty directly into a production environment would need to be thoroughly discussed to ensure support and methodology could achieve the intended outcome of richer curriculum.

Cameron and Puro (2010) discussed internships and the ability to practice them, by which they lauded the amazing benefits that students would receive if they were to work in a production environment. The placement functions that industries desired the College to focus on could start out by concentrating on a robust internship and externship program, similar to Cameron and Puro's (2010) portrayal.

Conclusions

Implication for Actions

The focus of the research was heavily influenced by the thoughts and ideas from business and industry. The findings provided areas of contention that the academic perspective, through the interviews, outlined. Although the academic processes might be sound for the development of programs, the perception from business and industry led the researcher to examine their areas of concern.

The overall findings would lead the researcher to thoroughly examine the core mission and business model that the College operates under. Incorporating a talent and placement focus with faculty being deployed into industry will require an extensive dialogue with faculty and staff first to understand these changes and second to successfully implement them into updated college processes. Use of the Kotter (2008) model of change would be an appropriate application to create the sense of urgency that would propel college discussions to focus on awareness of the issues brought forward. The second step would be to create a collaborative environment that would promote suggestions and ideas to surface from faculty and staff that would lead to a series of cohesive action plans to be created and implemented. The set of findings that follow would utilize this change management process.

A major finding for the study was the need for the College to affix a permanent team that would be responsible for strategic interactions with industry. The purpose behind the team would be to build a solid foundational relationship with industry, allowing knowledge and opportunities to be explored through the entire force of the campus, as opposed to running the partnership through the single-person mode that is

currently in place. Core to this effort would be to ensure that the cross-divisional team would be empowered to act on behalf of the College to enter into collaborations that could benefit both entities. The team should be comprised of administrators and faculty, and should have an appointed leader who would oversee the budget, deliverables, and reports to the president. The cabinet, in conjunction with the president, should convene a process with the team to assess and recommend the strategic areas on which the College would focus.

As was learned in the Dougherty and Bakia study (1999), the team should not be isolated from the rest of the College. It would be imperative, given the lack of college resources, that the team should work within the current processes and develop systems that would allow a greater focus to be placed on the external companies that would fit in the strategic direction of the College. If empowered, the team could also start tackling the talent recruiting and placement, as well as internship and externship functions that would be requested by the industries. Organizational structures have thinned out in the community college world; therefore, the need to work in matrix and team environments with fluidity and to adapt quickly to change would be one of the keys to creating and sustaining these relationships successfully.

The business model of colleges would need to be tweaked if the educational focus directions that the industries suggested were to be adopted. The switch in focus to placing students and forecasting newly required skills would require that an entirely new set of talents and structures be installed in the College. When identifying normal administrative positions, the thought might be to hire individuals who would have entrepreneurial skills that could blend across the administrative functions and allow them to assist in the

placement, job forecasting, and other areas that would create expertise within the College setting.

Training and professional development programs for administrators should align more with business and industry than with selecting the typical academic organizational conferences. The greater the mindset is toward industry, the more connected the College should be to its local economy. One caveat that should always be observed is not to become so absorbed in the partnerships that the College would lose its mission. A key aspect of this scenario not occurring is the focused areas on which these efforts would be operating. One would hope that the skills and thoughts within the cross-divisional team would be interspersed with other areas on campus to ensure that they would also continually veer toward external constituent needs to address their requirements.

A major area to address is the immersion of faculty into business and shop settings. Practically, multitudes of challenges would have to be addressed to gain the type of access and experience to real live production settings. The college would need to develop a support structure that would place incentives for faculty to want to be a part of this process and would have to incorporate the necessary time and effort into their contractual workload. Close ties would need to be developed with an instructional designer for faculty to share both insight and awareness so that the curriculum could be built timely. Curriculum could be developed all year long, so the approval processes within might only need to be adjusted to create a more agile, flexible way of delivering fresh updates to the classroom. Getting faculty more involved in the actual curriculum development process should eliminate some of the current scalability issues that the College currently faces in creating new curriculum.

In the same way that four-year research university professors know that they must perform research as part of their teaching load, it should be a common practice to let community college faculty know they too would be responsible for curriculum updates and staying closely tied to their industries. It should be planned that according to their programs, faculty would have an academic consultancy period in which they would be working in their industries with a local company. The team that would oversee this process would have to have extensive contacts and communications with both the company and the faculty member to ensure a productive session. The team would be able to provide an orientation to the faculty member regarding what to expect and how the program would work. This type of structure would definitely be needed to scale these functions across the campus.

The higher education market for the most part has been structured and operates under the industrial model of deploying education where faculty dispenses information to students. An academic culture that would fit this model currently exists to operate effectively in this setting. Changes proposed from the interviews, relating to how curriculum should be designed in the future, would definitely require modifications to the existing academic framework. The expanded focus on talent recruitment and placement would also require changes.

For Schoolcraft, a major focus in working to implement these changes should start with identifying the key strategic programs in which a heavy concentration of industry collaboration would be needed. Each of the selected programs would act as a pilot to allow changes to the process in small doses. With the incremental approach, the change management route would rely on creating a successful endeavor that could eventually be broadened to the entire college culture over time. The administration and

faculty would need to work collaboratively to build new support structures, which would facilitate faculty working in the field with industry in a more deliberate approach.

Academic support mechanisms that are related to student internships and placement would need to be moved from student services to the academic process. Those functions would need to be incorporated into the curriculum process to cultivate better skill sets that students would require to be successful in the future. The incremental focus on successful strategic program deployment should provide a major impetus to move the academic culture towards transformative, active learning and slowly away from the industrial model approach.

A major component of the study was not only to address shortcomings in eliminating the skills gap; it was also to create alternative revenue streams addressing the shrinking college revenue picture. The intent of the initiatives from above would bring in some alternative revenue, but the main driver to address the revenue shortfall will rest on the increased enrollment that potentially will be created with these initiatives. The stronger the linkages are to relevant, flexible curriculum that can timely place students in either internships or full time positions, the stronger the likelihood that enrollment will rise, thus providing much needed revenue to the College.

Theoretically, the implications for all of these actions should produce eight outcomes:

1. Curriculum is relevant, agile, and flexible.
2. Faculty are up to date and industry certified.
3. Experiential learning expands with training on-site or partner shared facility.
4. Placement functions provide additional revenue via services to industry.

5. Recruiting of students expands vocational credit hours, allowing further investment.
6. College assets used more, alternative revenue rises.
7. College has in-house strategy on programs that are in need and are vetted, which drives enrollment up.
8. College drives more business to locate in the community according to its track record of integration to business needs.

Schoolcraft College has an extensive record of partnerships and business dealings over the past 20 years. The recommendations in this study are to continue with those efforts, but incorporate the expanded educational focus and to create the team infrastructure that would spread the relationship and collaboration activities so that it would have a major impact on the classroom. The diagram in Appendix F provides an image of what the external constituents believe that Schoolcraft College must address to set the environment for the creation of sustainable collaborations that would be able to deliver on the outcomes that were previously discussed.

The researcher's study should have applicability to other community colleges across the country. The problem with unfilled jobs and shrinking college resources is a nationwide issue. The core themes introduced through the findings are probably similar to other institutions in that the educational framework of most community colleges in the country has mirrored practices that were created in the 1960s. Some colleges without the significant assets that Schoolcraft has at its disposal might be limited in their offerings to industry. Overall, the findings from this study should be applicable in some form for most community colleges.

Recommendations for Further Research

One of the areas for additional research would be to identify the Higher Learning Commission's feedback on incorporating the expanded educational focus on industry and how it would affect the accreditation processes. Does the placement of students or the forecasting of new skills, and the recruitment of vocational students from the K–12 ranks constitute learning within the institution? The transformative experiential learning activities outside the classroom would flourish in a more connected industry setting. Therefore, how would the Higher Learning Commission handle these components? The bottom line question would be: When models and innovations occur such as those suggested here, will accreditation bodies stifle those endeavors through their reviews? Can they be flexible enough to assess the models if they do not fit into the categories of their more rigid and inflexible assessment process?

A key component of data that should be researched over time is to quantify the value and contribution of relationships with industries. A dashboard of metrics should be established to track and assess the effectiveness of each of the relationships that have been built through these collaborations. If these trends continue to occur, the need to identify the value would be critical to reporting out to various accreditation entities these results. Another aspect would be to define what subject areas would be more conducive to collaborations and how they would compare across the various types of community colleges, contrasting rural, suburban, city to small, midsize and large-population campuses. Very limited research currently has been done on partnerships in the community college environment.

With tighter connections to business and greater movement towards experiential active learning, the infrastructure that supports the creation and delivery of curriculum

would need to be analyzed and changed. The industrial model has had a major influence on how the structures and processes work within the current college environment. Research that focuses on models that more closely align with more entrepreneurial, transformative, educational practices would definitely be required to understand how the current college environment would need to change. Understanding the role of the faculty in this new paradigm and providing various paths and directions for what institutions would need to accomplish to meet these new demands would be required. The research should not be constrained to the educational space, but rather would more likely need to be conducted outside in the private sector to continue truly to infuse new thought and ideas to higher education.

Concluding Remarks

This chapter provided an overview of the problem of good-paying, highly skilled jobs going unfilled, while we continue to turn out more college graduates than at any point in the history of higher education (Duncan, 2015). A review of the three research questions identifies the key attributes, academic integration issues, and leadership characteristics that could develop and sustain effective collaborations. The research methodology explained the use of the quantitative survey to identify a wide range of local companies that serve the Schoolcraft region and gauge their awareness and interest in assets and services from the College.

A qualitative interview preceded the awareness survey and dug deeper into identifying issues and ideas from industry regarding what components in the environment would trigger their movement to collaborate with the College. An overview of findings showed the four major themes that emerged from industry that provided the actions and

components necessary to create sustainable effective collaborations. The themes of effective interaction, use of assets, expansion of educational focus, and academic transformation were thoroughly defined and analyzed.

Although the literature was very sparse when concerning collaborations with community colleges and industry, several key elements confirmed findings from the study. Dougherty and Bakia (1999) had excellent insight into the issue of not isolating teams or other structures that support industry, but rather of keeping those operations within the core academic processes of the College.

The biggest takeaway from the study was the industries' insistence on obtaining a stronger relationship with the College, which centered on a team approach instead of the current single-person method. They wanted the College to spend significant time learning about the business and working together to create new opportunities for both entities. The industries strongly pushed to have the College fill the placement of jobs gap that currently exists in the economy, by jointly recruiting K–12 students to participate in internships and externships to placement of graduates in full-time positions.

Industry is extremely interested in replacing the advisory committee approach to curriculum development and replacing that with faculty working in their production settings for extended periods to allow a better insight that could translate to the creation of fresh and relevant curricula. The industries believe that the College could be a promoter of the next wave of requirements for skills and a prognosticator of which jobs or opportunities might present themselves in the future. The belief is that the College has untapped assets in the faculty, staff, and conference facilities and that an ability to remain neutral when hosting industries or SMEs on hot topics critical to the industries in the local region.

Industries are convinced that the College has enormous capacity that to this date has not been fully used for the benefit of the local economy. Schoolcraft has been a leader in leveraging assets and has been challenged to continue that approach with a much more driven purpose to expand the educational focus through the effective interactions and innovative academic transformations that have been discussed in this study.

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APPENDIX A: IRB APPROVAL LETTER

FERRIS STATE UNIVERSITY

Institutional Review Board for Human Subjects in Research

Office of Academic Research, 220 Ferris Drive, PHR 308 · Big Rapids, MI 49307

Date: November 25, 2015

To: Dr. Sandra Balkema and Mr. Glenn Cerny
From: Dr. Gregory Wellman, IRB Chair
Re: IRB Application #151007 (*Successful Collaboration Parameters for Businesses and Community colleges: A Case Study of Schoolcraft College*)

The Ferris State University Institutional Review Board (IRB) has reviewed your application for using human subjects in the study, "*Successful Collaboration Parameters for Businesses and Community colleges: A Case Study of Schoolcraft College*" (#151007) and determined that it meets Federal Regulations Expedited-
category 2G. This approval has an expiration of one year from the date of this letter. **As such, you may collect data according to the procedures outlined in your application until November 25, 2016.** Should additional time be needed to conduct your approved study, a request for extension must be submitted to the IRB a month prior to its expiration.

Your protocol has been assigned project number (#151007), which you should refer to in future correspondence involving this same research procedure. Approval mandates that you follow all University policy and procedures, in addition to applicable governmental regulations. Approval applies only to the activities described in the protocol submission; should revisions need to be made, all materials must be approved by the IRB prior to initiation. In addition, the IRB must be made aware of any serious and unexpected and/or unanticipated adverse events as well as complaints and non-compliance issues.

Understand that informed consent is a process beginning with a description of the study and participant rights with assurance of participant understanding, followed by a signed consent form. Informed consent must continue throughout the study via a dialogue between the researcher and research participant. Federal regulations require each participant receive a copy of the signed consent document and investigators maintain consent records for a minimum of three years.

As mandated by Title 45 Code of Federal Regulations, Part 46 (45 CFR 46) the IRB requires submission of annual reviews during the life of the research project and a Final Report Form upon study completion. Thank you for your compliance with these guidelines and best wishes for a successful research endeavor. Please let us know if the IRB can be of any future assistance.

Regards,



Ferris State University Institutional Review Board
Office of Academic Research, Academic Affairs

APPENDIX B: QUANTITATIVE SURVEY TOOL

Informed Consent Waiver

Project Title: Successful collaboration parameters for businesses and community colleges: A case study of Schoolcraft College

Principal Investigator/Faculty Advisor: Sandy Balkema

Email: balkemas@ferris.edu

Phone: 231-591-5631 or 616-881-9577

You are invited to participate in a voluntary online survey about business, industry, and municipalities knowledge about Schoolcraft College. Researchers are interested in gaining insight from business, industry, and municipalities regarding partnerships and collaboration opportunities with Schoolcraft College. We estimate that it will take approximately five minutes to answer the survey questions. Once you begin the survey, you must answer all questions. If you do not wish to answer a question you may exit the survey at any time and none of your responses will be recorded.

Information collected will benefit community colleges, including Schoolcraft, as they rely on solid cooperative relationships with local businesses, industry, and municipalities so the colleges can provide workforce education and training programs that are relevant and valuable to the communities they serve. This allows local businesses, industry, and municipalities to leverage resources available through the colleges to maximize dwindling resources. Finally, the connection between the colleges and external partners allows for an increased amount of experiential learning opportunities which are currently in short supply. The study will present no greater risk than what one encounters in daily life. The survey data will be collected by the researcher and will be kept safe. The researchers will protect your information and maintain your confidentiality. The data you provide will be stored in a locked file. The researchers will retain the data for 3 years following study completion after which time the researchers will dispose of your data by standard state of the art methods for secure disposal. The data will not be made available to other researchers for other studies following the completion of this research study.

Participation or nonparticipation in this study will not impact your relationship with Ferris State University or Schoolcraft College in any way. Upon completion of this survey, the researcher may contact you for further information. Once you begin the survey, you must answer all questions. If you wish to skip/not answer a question, you may exit the survey at any time and the information you have already provided will/will not be recorded.

If you have questions about this study, please contact the Faculty Advisor Sandy Balkema, listed above. If you have questions about your rights as a participant, contact the Ferris State University Institutional Review Board (IRB) for Human Participants at: 220 Ferris Drive, PHR 308, Big Rapids, MI 49307 (231) 591-2553 or IRB@ferris.edu.

By clicking on the link below, you consent to participate in this research study.

Schoolcraft College is embarking on a research project to identify requirements and interest levels from business and industry on future collaborations and partnerships with the college. Schoolcraft has reached out to your business and you have been selected to respond to this very important survey. It will take approximately 5 to 10 minutes to complete and will assist in providing valuable information to both the college and the business community.

1. Name of Company you Represent:

2. What type of category best describes your business?

- Agriculture, Forestry, and Fishing
- Mining
- Construction
- Manufacturing
- Transportation
- Wholesale Trade
- Retail Trade
- Finance, Insurance, and Real Estate
- Services
- Public Administration
- Other (please specify)

3. Which range best describes the number of employees within your company?

- 1-49
- 50-99
- 100-199
- 200-499
- 500-2499
- 2500 +

4. What is your company's total amount of dollars allocated for staff development? (Staff development is defined as any dollars for training either internally or externally spent on your employees, conferences, seminars etc.)

- 0 - \$4,999
- \$5,000 - \$14,999
- \$15,000 - \$29,999
- \$30,000 - \$49,999
- \$50,000 +

5. On average, how much time does a typical employee spend on training per calendar year?

- 0 - 6 hours
- 7-14 hours
- 15-21 hours
- 22-28 hours
- 29 hours or greater

6. Are there established industry standards that your company utilizes in your staff development training?

- No
- Yes (please specify)

7. How well do you feel your company's training facilities meet the needs for staff development?

- Extremely Well
- Very Well
- Moderately Well
- Slightly Well
- Not At All (please describe why)

8. How would you rate your knowledge with the Academic, Continuing Education and Professional Development, and Business Development Center programs and services offered at Schoolcraft College?

	Extremely Knowledgeable	Very Knowledgeable	Moderately Knowledgeable	Slightly Knowledgeable	Not at All
Academic Programs - Associate Degrees	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Academic Programs - Certificates	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Continuing Education and Professional Development	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Business Development Center - Small Business Development	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Business Development Center - PTAC	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Business Development Center - Workforce Training Solutions	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

9. Based on your knowledge of Schoolcraft College, how likely would you be to look to the college to provide staff development and training?

- Extremely Likely
- Very Likely
- Moderately Likely
- Slightly Likely
- Not at All (please describe why)

10. If Schoolcraft College had assets your company could leverage, what would be your level of interest in those assets?

	Extremely Likely	Very Likely	Moderately Likely	Slightly Likely	Not at All
Business Development Resources	<input type="radio"/>				
Conference Facilities	<input type="radio"/>				
Continuing Education and Professional Development	<input type="radio"/>				
Customized Workforce Training	<input type="radio"/>				
Relevant Academic Programming	<input type="radio"/>				
Shared Services	<input type="radio"/>				
Training Facilities	<input type="radio"/>				
Other	<input type="radio"/>				

If you answered "Other" with Moderately to Extremely Likely, Please Describe:

11. What would be your level of interest in creating a joint venture with Schoolcraft College?

- Extremely Likely
- Very Likely
- Moderately Likely
- Slightly Likely
- Not at All

12. Does your company have or is interested in apprenticeship (on the job training with company specific education) programs?

- Yes, we have them
- Yes, we are interested
- No

13. If your answer to question 12 was yes, what would be your level of interest in creating an apprenticeship program with your company and Schoolcraft College?

- Extremely Interested
- Very Interested
- Moderately Interested
- Slightly Interested
- Not Applicable
- Not at All - Please describe why _____
Other (please specify)

14. Please provide any additional comments on your companies training, facility, and asset needs that Schoolcraft College could help you to facilitate.

APPENDIX C: QUALITATIVE INTERVIEW LETTER OF CONSENT

Informed Consent Waiver - Interview

Project Title: Successful collaboration parameters for businesses and community colleges: A case study of Schoolcraft College

Principal Investigator & Faculty Advisor: Sandy Balkema

Email: balkemas@ferris.edu **Phone:** 231-591-5631 or 616-881-9577

You are invited to participate in a voluntary face-to-face interview about identifying characteristics that leaders believe are required to create and sustain effective partnerships. The researcher, Glenn Cerny, is interested in studying how partnerships can be formulated, evaluated, and assessed for long-term sustainability to be utilized as a major factor to offset the resource shortages plaguing the community college sector, as well as fill the workforce gaps for local industry. Information will be collected through a minimum of five interviews with businesses, industry, and municipalities within Schoolcraft College's service area. Each interview will take approximately 30-45 minutes to complete.

The interviews will be transcribed by an outside transcriptionist that will be present at the time of the interview. She will take handwritten notes during the meeting and will type them on dedicated computers and turned over all materials to the researcher. The transcriptionist will not keep a copy of these records. The data you provide will be stored in a locked file. The researcher will retain the data for 3 years after which time the researcher will dispose of your data by standard state of the art methods for secure disposal. The data will not be made available to other researchers for other studies following the completion of this research study. The topic of business, industry, and municipalities knowledge about Schoolcraft College is not sensitive.

Information collected from the interview will directly benefit Schoolcraft College and its administration, faculty, and staff as they make future decisions impacting the direction of the college. The information gathered will allow the campus leaders to determine where positive adjustments can be made to programming and processes, and the study will present no greater risk than what one encounters in daily life. Information provided will not be attached to you or your organization. You may refuse to answer any question at any time, without consequence. Your participation or nonparticipation in this study will not impact your relationship with Ferris State University or Schoolcraft College in any way.

If you have questions about this study, please contact the researcher's Faculty Advisor, Dr. Sandy Balkema, listed above. If you have questions about your rights as a participant, contact the Ferris State University Institutional Review Board (IRB) for Human Participants at 1201 S. State St. CSS 310, Big Rapids, MI 49307 (231) 591-2553 or IRB@ferris.edu.

By signing and dating this Informed Consent form, you consent to participate in this research study.

Signature

Date

APPENDIX D: CHI-SQUARE TESTS FOR QUANTITATIVE SURVEY

Question 4

What Type of Category Best Describes Your Business?

What is your company's total amount of dollars allocated for staff development? (Staff development is defined as any dollars for training either internally or externally spent on your employees, conferences, seminars etc.)	Manufacturing	Non-Manuf.	Public Admin.	Grand Total	% of Category
\$50,000 or greater	6	17	1	23	0.410714286
\$30,000 - \$49,999	1	0	1	2	0.035714286
\$15,000 - \$29,999	3	4	0	7	0.125000000
\$5,000 - \$14,999	6	8	2	16	0.285714286
0 - \$4,999	2	4	1	7	0.125000000
Grand Total	18	33	5	56	

Chi Square Analysis

Survey Values	Manufacturing	Non-Manuf.	Public Admin.	% of Category
\$50,000 or greater	6	17	1	0.410714286
\$30,000 - \$49,999	1	0	1	0.035714286
\$15,000 - \$29,999	3	4	0	0.125000000
\$5,000 - \$14,999	6	8	2	0.285714286
0 - \$4,999	2	4	1	0.125000000

Expected Values	Manufacturing	Non-Manuf.	Public Admin.
\$50,000 or greater	7.392857143	13.55357143	2.053571429
\$30,000 - \$49,999	0.642857143	1.178571429	0.178571429
\$15,000 - \$29,999	2.250000000	4.125000000	0.625000000
\$5,000 - \$14,999	5.142857143	9.428571429	1.428571429
0 - \$4,999	2.250000000	4.125000000	0.625000000

$p = 0.380932381$
 $p > .05$

Which range best describes the number of employees within your company?

What is your company's total amount of dollars allocated for staff development? (Staff development is defined as any dollars for training either internally or externally spent on your employees, conferences, seminars etc.)	1-49	50-99	100-199	200-499	500-2499	2500	Grand Total
\$50,000 or greater	1	4	1	4	3	11	24
\$30,000 - \$49,999	0	0	2	1	0	0	3
\$15,000 - \$29,999	2	1	1	0	1	1	6
\$5,000 - \$14,999	11	2	1	0	2	0	16
0 - \$4,999	6	0	1	0	0	0	7
Grand Total	20	7	6	5	6	12	56

Chi Square Analysis

Survey Values	1-49	50-99	100-199	200-499	500-2499	2500	% of Category
\$50,000 or greater	1	4	1	4	3	11	0.428571429
\$30,000 - \$49,999	0	0	2	1	0	0	0.053571429
\$15,000 - \$29,999	2	1	1	0	1	1	0.107142857
\$5,000 - \$14,999	11	2	1	0	2	0	0.285714286
0 - \$4,999	6	0	1	0	0	0	0.125000000

Expected Values	1-49	50-99	100-199	200-499	500-2499	2500
\$50,000 or greater	8.57	3.00	2.57	2.14	2.57	5.14
\$30,000 - \$49,999	1.07	0.38	0.32	0.27	0.32	0.64
\$15,000 - \$29,999	2.14	0.75	0.64	0.54	0.64	1.29
\$5,000 - \$14,999	5.71	2.00	1.71	1.43	1.71	3.43
0 - \$4,999	2.50	0.88	0.75	0.63	0.75	1.50

$p = 0.00026755$
 $p < .05$

Question 5

What Type of Category Best Describes Your Business?

On average, how much time does a typical employee spend on training per calendar year?	Manufacturing	Non-Manuf.	Public Admin.	Grand Total	% of Category
0 - 6 hours	2	3	0	5	0.089285714
15-21 hours	5	9	2	16	0.285714286
22-28 hours	0	6	1	7	0.125000000
29 hours or greater	5	9	0	14	0.250000000
7-14 hours	6	6	2	14	0.250000000
Grand Total	18	33	5	56	

Chi Square Analysis

Survey Values	Manufacturing	Non-Manuf.	Public Admin.	% of Category
0 - 6 hours	2	3	0	0.089285714
15-21 hours	5	9	2	0.285714286
22-28 hours	0	6	1	0.125000000
29 hours or greater	5	9	0	0.250000000
7-14 hours	6	6	2	0.250000000

Expected Values	Manufacturing	Non-Manuf.	Public Admin.
0 - 6 hours	1.607142857	2.946428571	0.446428571
15-21 hours	5.142857143	9.428571429	1.428571429
22-28 hours	2.250000000	4.125000000	0.625000000
29 hours or greater	4.500000000	8.250000000	1.250000000
7-14 hours	4.500000000	8.250000000	1.250000000

p = 0.53016234
 p > .05

Which range best describes the number of employees within your company?

On average, how much time does a typical employee spend on training per calendar year?	1-49	50-99	100-199	200-499	500-2499	2500	Grand Total
0 - 6 hours	5	0	0	0	0	0	5
15-21 hours	6	1	2	2	2	3	16
22-28 hours	1	1	0	1	1	3	7
29 hours or greater	1	2	1	2	2	6	14
7-14 hours	7	3	3	0	1	0	14
Grand Total	20	7	6	5	6	12	56

Chi Square Analysis

Survey Values	1-49	50-99	100-199	200-499	500-2499	2500	% of Category
0 - 6 hours	5	0	0	0	0	0	0.089285714
15-21 hours	6	1	2	2	2	3	0.285714286
22-28 hours	1	1	0	1	1	3	0.125000000
29 hours or greater	1	2	1	2	2	6	0.250000000
7-14 hours	7	3	3	0	1	0	0.250000000

Expected Values	1-49	50-99	100-199	200-499	500-2499	2500
0 - 6 hours	1.79	0.63	0.54	0.45	0.54	1.07
15-21 hours	5.71	2.00	1.71	1.43	1.71	3.43
22-28 hours	2.50	0.88	0.75	0.63	0.75	1.50
29 hours or greater	5.00	1.75	1.50	1.25	1.50	3.00
7-14 hours	5.00	1.75	1.50	1.25	1.50	3.00

p = .10948394
 p > .05

Question 6

What Type of Category Best Describes Your Business?

Are there established industry standards that your company utilizes in your staff development training?	Manufacturing	Non-Manuf.	Public Admin.	Grand Total	% of Category
No	11	16	3	30	0.535714286
Yes (please specify)	7	17	2	26	0.464285714
Grand Total	18	33	5	56	

Chi Square Analysis

Survey Values	Manufacturing	Non-Manuf.	Public Admin.	Grand Total	% of Category
No	11	16	3	30	0.535714286
Yes (please specify)	7	17	2	26	0.464285714

Expected Values	Manufacturing	Non-Manuf.	Public Admin.	
No	9.642857143	17.67857143	2.678571429	p = 0.6577858 p > .05
Yes (please specify)	8.357142857	15.32142857	2.321428571	

Which range best describes the number of employees within your company?

Are there established industry standards that your company utilizes in your staff development training?	1-49	50-99	100-199	200-499	500-2499	2500	Grand Total
No	14	2	5	2	1	6	30
Yes (please specify)	6	5	1	3	5	6	26
Grand Total	20	7	6	5	6	12	56

Chi Square Analysis

Survey Values	1-49	50-99	100-199	200-499	500-2499	2500	% of Category
No	14	2	5	2	1	6	0.535714286
Yes (please specify)	6	5	1	3	5	6	0.464285714

Expected Values	1-49	50-99	100-199	200-499	500-2499	2500	
No	10.71	3.75	3.21	2.68	3.21	6.43	p = 0.081615014 p > .05
Yes (please specify)	9.29	3.25	2.79	2.32	2.79	5.57	

Question 7

What Type of Category Best Describes Your Business?

How well do you feel your company's training facilities meet the needs for staff development?	Manufacturing	Non-Manuf.	Public Admin.	Grand Total	% of Category
Extremely Well	1	6	1	8	0.142857143
Moderately Well	8	13	2	23	0.410714286
Not At All (please describe why)	1	2	1	4	0.071428571
Slightly Well	2	5	0	7	0.125000000
Very Well	6	7	1	14	0.250000000
Grand Total	18	33	5	56	

Chi Square Analysis

Survey Values	Manufacturing	Non-Manuf.	Public Admin.	% of Category
Extremely Well	1	6	1	0.142857143
Moderately Well	8	13	2	0.410714286
Not At All (please describe why)	1	2	1	0.071428571
Slightly Well	2	5	0	0.125000000
Very Well	6	7	1	0.250000000

Expected Values	Manufacturing	Non-Manuf.	Public Admin.
Extremely Well	2.571428571	4.714285714	0.714285714
Moderately Well	7.392857143	13.55357143	2.053571429
Not At All (please describe why)	1.285714286	2.357142857	0.357142857
Slightly Well	2.250000000	4.125000000	0.625000000
Very Well	4.500000000	8.250000000	1.250000000

p = 0.82408534
p > .05

Which range best describes the number of employees within your company?

How well do you feel your company's training facilities meet the needs for staff development?	1-49	50-99	100-199	200-499	500-2499	2500	Grand Total
Extremely Well	3	0	1	1	2	1	8
Moderately Well	7	3	3	2	2	6	23
Not At All (please describe why)	4	0	0	0	0	0	4
Slightly Well	2	3	0	0	1	1	7
Very Well	4	1	2	2	1	4	14
Grand Total	20	7	6	5	6	12	56

Chi Square Analysis

Survey Values	1-49	50-99	100-199	200-499	500-2499	2500	% of Category
Extremely Well	3	0	1	1	2	1	0.142857143
Moderately Well	7	3	3	2	2	6	0.410714286
Not At All (please describe why)	4	0	0	0	0	0	0.071428571
Slightly Well	2	3	0	0	1	1	0.125000000
Very Well	4	1	2	2	1	4	0.250000000

Expected Values	1-49	50-99	100-199	200-499	500-2499	2500
Extremely Well	2.86	1.00	0.86	0.71	0.86	1.71
Moderately Well	8.21	2.88	2.46	2.05	2.46	4.93
Not At All (please describe why)	1.43	0.50	0.43	0.36	0.43	0.86
Slightly Well	2.50	0.88	0.75	0.63	0.75	1.50
Very Well	5.00	1.75	1.50	1.25	1.50	3.00

p = .501529554
p > .05

Question 8 – Academic Programs – Associate Degrees

What Type of Category Best Describes Your Business?

How would you rate your knowledge with the Academic, Continuing Education and Professional Development, and Business Development Center programs and services offered at Schoolcraft College? - Academic Programs - Associate Degrees	Manufacturing	Non-Manuf.	Public Admin.	Grand Total	% of Category
Extremely Knowledgeable	1	1	0	2	0.035714286
Moderately Knowledgeable	7	16	2	25	0.446428571
Not at All	0	2	0	2	0.035714286
Slightly Knowledgeable	6	5	1	12	0.214285714
Very Knowledgeable	4	9	2	15	0.267857143
Grand Total	18	33	5	56	

Chi Square Analysis

Survey Values	Manufacturing	Non-Manuf.	Public Admin.	% of Category
Extremely Knowledgeable	1	1	0	0.035714286
Moderately Knowledgeable	7	16	2	0.446428571
Not at All	0	2	0	0.035714286
Slightly Knowledgeable	6	5	1	0.214285714
Very Knowledgeable	4	9	2	0.267857143

Expected Values	Manufacturing	Non-Manuf.	Public Admin.
Extremely Knowledgeable	0.642857143	1.178571429	0.178571429
Moderately Knowledgeable	8.035714286	14.73214286	2.232142857
Not at All	0.642857143	1.178571429	0.178571429
Slightly Knowledgeable	3.857142857	7.071428571	1.071428571
Very Knowledgeable	4.821428571	8.839285714	1.339285714

p = 0.82564959
p > .05

Which range best describes the number of employees within your company?

How would you rate your knowledge with the Academic, Continuing Education and Professional Development, and Business Development Center programs and services offered at Schoolcraft College? - Academic Programs - Associate Degrees	1-49	50-99	100-199	200-499	500-2499	2500	Grand Total
Extremely Knowledgeable	1	0	1	0	0	0	2
Moderately Knowledgeable	11	2	3	2	2	5	25
Not at All	0	0	1	1	0	0	2
Slightly Knowledgeable	6	1	0	1	2	2	12
Very Knowledgeable	2	4	1	1	2	5	15
Grand Total	20	7	6	5	6	12	56

Chi Square Analysis

Survey Values	1-49	50-99	100-199	200-499	500-2499	2500	% of Category
Extremely Knowledgeable	1	0	1	0	0	0	0.035714286
Moderately Knowledgeable	11	2	3	2	2	5	0.446428571
Not at All	0	0	1	1	0	0	0.035714286
Slightly Knowledgeable	6	1	0	1	2	2	0.214285714
Very Knowledgeable	2	4	1	1	2	5	0.267857143

Expected Values	1-49	50-99	100-199	200-499	500-2499	2500
Extremely Knowledgeable	0.71	0.25	0.21	0.18	0.21	0.43
Moderately Knowledgeable	8.93	3.13	2.68	2.23	2.68	5.36
Not at All	0.71	0.25	0.21	0.18	0.21	0.43
Slightly Knowledgeable	4.29	1.50	1.29	1.07	1.29	2.57
Very Knowledgeable	5.36	1.88	1.61	1.34	1.61	3.21

p = .337287762
p > .05

Question 8 – Continuing Education and Professional Development

What Type of Category Best Describes Your Business?

How would you rate your knowledge with the Academic, Continuing Education and Professional Development, and Business Development Center programs and services offered at Schoolcraft College? - Continuing Education and Professional Development	Manufacturing	Non-Manuf.	Public Admin.	Grand Total	% of Category
Extremely Knowledgeable	0	2	0	2	0.035714286
Moderately Knowledgeable	8	14	3	25	0.446428571
Not at All	1	3	0	4	0.071428571
Slightly Knowledgeable	3	9	0	12	0.214285714
Very Knowledgeable	6	5	2	13	0.232142857
Grand Total	18	33	5	56	

Chi Square Analysis

Survey Values	Manufacturing	Non-Manuf.	Public Admin.	% of Category
Extremely Knowledgeable	0	2	0	0.035714286
Moderately Knowledgeable	8	14	3	0.446428571
Not at All	1	3	0	0.071428571
Slightly Knowledgeable	3	9	0	0.214285714
Very Knowledgeable	6	5	2	0.232142857

Expected Values	Manufacturing	Non-Manuf.	Public Admin.	
Extremely Knowledgeable	0.642857143	1.178571429	0.178571429	p = 0.602140588 p > .05
Moderately Knowledgeable	8.035714286	14.73214286	2.232142857	
Not at All	1.285714286	2.357142857	0.357142857	
Slightly Knowledgeable	3.857142857	7.071428571	1.071428571	
Very Knowledgeable	4.178571429	7.660714286	1.160714286	

Which range best describes the number of employees within your company?

How would you rate your knowledge with the Academic, Continuing Education and Professional Development, and Business Development Center programs and services offered at Schoolcraft College? - Continuing Education and Professional Development	1-49	50-99	100-199	200-499	500-2499	2500	Grand Total
Extremely Knowledgeable	1	0	0	0	0	1	2
Moderately Knowledgeable	8	4	2	1	3	7	25
Not at All	2	0	1	0	0	1	4
Slightly Knowledgeable	3	2	0	2	3	2	12
Very Knowledgeable	6	1	3	2	0	1	13
Grand Total	20	7	6	5	6	12	56

Chi Square Analysis

Survey Values	1-49	50-99	100-199	200-499	500-2499	2500	% of Category
Extremely Knowledgeable	1	0	0	0	0	1	0.035714286
Moderately Knowledgeable	8	4	2	1	3	7	0.446428571
Not at All	2	0	1	0	0	1	0.071428571
Slightly Knowledgeable	3	2	0	2	3	2	0.214285714
Very Knowledgeable	6	1	3	2	0	1	0.232142857

Expected Values	1-49	50-99	100-199	200-499	500-2499	2500	
Extremely Knowledgeable	0.71	0.25	0.21	0.18	0.21	0.43	p = .687657959 p > .05
Moderately Knowledgeable	8.93	3.13	2.68	2.23	2.68	5.36	
Not at All	1.43	0.50	0.43	0.36	0.43	0.86	
Slightly Knowledgeable	4.29	1.50	1.29	1.07	1.29	2.57	
Very Knowledgeable	4.64	1.63	1.39	1.16	1.39	2.79	

Question 8 – Business Development Center

What Type of Category Best Describes Your Business?

How would you rate your knowledge with the Academic, Continuing Education and Professional Development, and Business Development Center programs and services offered at Schoolcraft College? - Business Development Center	Manufacturing	Non-Manuf.	Public Admin.	Grand Total	% of Category
Extremely Knowledgeable	1	0	0	1	0.017857143
Moderately Knowledgeable	5	10	2	17	0.303571429
Not at All	2	8	0	10	0.178571429
Slightly Knowledgeable	7	11	1	19	0.339285714
Very Knowledgeable	3	4	2	9	0.160714286
Grand Total	18	33	5	56	

Chi Square Analysis

Survey Values	Manufacturing	Non-Manuf.	Public Admin.	% of Category
Extremely Knowledgeable	1	0	0	0.017857143
Moderately Knowledgeable	5	10	2	0.303571429
Not at All	2	8	0	0.178571429
Slightly Knowledgeable	7	11	1	0.339285714
Very Knowledgeable	3	4	2	0.160714286

Expected Values	Manufacturing	Non-Manuf.	Public Admin.
Extremely Knowledgeable	0.321428571	0.589285714	0.089285714
Moderately Knowledgeable	5.464285714	10.01785714	1.517857143
Not at All	3.214285714	5.892857143	0.892857143
Slightly Knowledgeable	6.107142857	11.19642857	1.696428571
Very Knowledgeable	2.892857143	5.303571429	0.803571429

p = 0.543726643
p > .05

Which range best describes the number of employees within your company?

How would you rate your knowledge with the Academic, Continuing Education and Professional Development, and Business Development Center programs and services offered at Schoolcraft College? - Business Development Center	1-49	50-99	100-199	200-499	500-2499	2500	Grand Total
Extremely Knowledgeable	0	0	1	0	0	0	1
Moderately Knowledgeable	6	2	1	1	2	5	17
Not at All	3	2	1	1	1	2	10
Slightly Knowledgeable	8	3	0	2	3	3	19
Very Knowledgeable	3	0	3	1	0	2	9
Grand Total	20	7	6	5	6	12	56

Chi Square Analysis

Survey Values	1-49	50-99	100-199	200-499	500-2499	2500	% of Category
Extremely Knowledgeable	0	0	1	0	0	0	0.017857143
Moderately Knowledgeable	6	2	1	1	2	5	0.303571429
Not at All	3	2	1	1	1	2	0.178571429
Slightly Knowledgeable	8	3	0	2	3	3	0.339285714
Very Knowledgeable	3	0	3	1	0	2	0.160714286

Expected Values	1-49	50-99	100-199	200-499	500-2499	2500
Extremely Knowledgeable	0.36	0.13	0.11	0.09	0.11	0.21
Moderately Knowledgeable	6.07	2.13	1.82	1.52	1.82	3.64
Not at All	3.57	1.25	1.07	0.89	1.07	2.14
Slightly Knowledgeable	6.79	2.38	2.04	1.70	2.04	4.07
Very Knowledgeable	3.21	1.13	0.96	0.80	0.96	1.93

p = .480166839
p > .05

Question 9

What Type of Category Best Describes Your Business?

Based on your knowledge of Schoolcraft College, how likely would you be to look to the college to provide staff development and training?	Manufacturing	Non-Manuf.	Public Admin.	Grand Total	% of Category
Extremely Likely	4	4	0	8	0.142857143
Moderately Likely	4	11	3	18	0.321428571
Not at All (please describe why)	1	4	0	5	0.089285714
Slightly Likely	2	8	0	10	0.178571429
Very Likely	7	6	2	15	0.267857143
Grand Total	18	33	5	56	

Chi Square Analysis

Survey Values	Manufacturing	Non-Manuf.	Public Admin.	% of Category
Extremely Likely	4	4	0	0.142857143
Moderately Likely	4	11	3	0.321428571
Not at All (please describe why)	1	4	0	0.089285714
Slightly Likely	2	8	0	0.178571429
Very Likely	7	6	2	0.267857143

Expected Values	Manufacturing	Non-Manuf.	Public Admin.
Extremely Likely	2.571428571	4.714285714	0.714285714
Moderately Likely	5.785714286	10.60714286	1.607142857
Not at All (please describe why)	1.607142857	2.946428571	0.446428571
Slightly Likely	3.214285714	5.892857143	0.892857143
Very Likely	4.821428571	8.839285714	1.339285714

p = 0.362161964
p > .05

Which range best describes the number of employees within your company?

Based on your knowledge of Schoolcraft College, how likely would you be to look to the college to provide staff development and training?	1-49	50-99	100-199	200-499	500-2499	2500	Grand Total
Extremely Likely	4	1	2	0	0	1	8
Moderately Likely	5	2	3	2	2	4	18
Not at All (please describe why)	3	0	0	1	1	0	5
Slightly Likely	3	2	1	1	2	1	10
Very Likely	5	2	1	1	1	5	15
Grand Total	20	7	7	5	6	11	56

Chi Square Analysis

Survey Values	1-49	50-99	100-199	200-499	500-2499	2500	% of Category
Extremely Likely	4	1	2	0	0	1	0.142857143
Moderately Likely	5	2	3	2	2	4	0.321428571
Not at All (please describe why)	3	0	0	1	1	0	0.089285714
Slightly Likely	3	2	1	1	2	1	0.178571429
Very Likely	5	2	1	1	1	5	0.267857143

Expected Values	1-49	50-99	100-199	200-499	500-2499	2500
Extremely Likely	2.86	1.00	1.00	0.71	0.86	1.57
Moderately Likely	6.43	2.25	2.25	1.61	1.93	3.54
Not at All (please describe why)	1.79	0.63	0.63	0.45	0.54	0.98
Slightly Likely	3.57	1.25	1.25	0.89	1.07	1.96
Very Likely	5.36	1.88	1.88	1.34	1.61	2.95

p = .9089752152
p > .05

Question 10 – Business Development

What Type of Category Best Describes Your Business?

If Schoolcraft College had assets your company could leverage, what would be your level of interest in those assets? - Business Development Resources	Manufacturing	Non-Manuf.	Public Admin.	Grand Total	% of Category
Extremely Likely	2	2	1	5	0.089285714
Moderately Likely	4	10	1	15	0.267857143
Not at All	3	4	0	7	0.125000000
Slightly Likely	4	5	2	11	0.196428571
Very Likely	5	12	1	18	0.321428571
Grand Total	18	33	5	56	

Chi Square Analysis

Survey Values	Manufacturing	Non-Manuf.	Public Admin.	% of Category
Extremely Likely	2	2	1	0.089285714
Moderately Likely	4	10	1	0.267857143
Not at All	3	4	0	0.125000000
Slightly Likely	4	5	2	0.196428571
Very Likely	5	12	1	0.321428571

Expected Values	Manufacturing	Non-Manuf.	Public Admin.
Extremely Likely	1.607142857	2.946428571	0.446428571
Moderately Likely	4.821428571	8.839285714	1.339285714
Not at All	2.250000000	4.125000000	0.625000000
Slightly Likely	3.535714286	6.482142857	0.982142857
Very Likely	5.785714286	10.60714286	1.607142857

p = 0.827424504
p > .05

Which range best describes the number of employees within your company?

If Schoolcraft College had assets your company could leverage, what would be your level of interest in those assets? - Business Development Resources	1-49	50-99	100-199	200-499	500-2499	2500	Grand Total
Extremely Likely	2	1	2	0	0	0	5
Moderately Likely	5	2	2	1	1	4	15
Not at All	4	0	0	1	0	2	7
Slightly Likely	1	2	2	0	4	2	11
Very Likely	8	2	0	3	1	4	18
Grand Total	20	7	6	5	6	12	56

Chi Square Analysis

Survey Values	1-49	50-99	100-199	200-499	500-2499	2500	% of Category
Extremely Likely	2	1	2	0	0	0	0.089285714
Moderately Likely	5	2	2	1	1	4	0.267857143
Not at All	4	0	0	1	0	2	0.125000000
Slightly Likely	1	2	2	0	4	2	0.196428571
Very Likely	8	2	0	3	1	4	0.321428571

Expected Values	1-49	50-99	100-199	200-499	500-2499	2500
Extremely Likely	1.79	0.63	0.54	0.45	0.54	1.07
Moderately Likely	5.36	1.88	1.61	1.34	1.61	3.21
Not at All	2.50	0.88	0.75	0.63	0.75	1.50
Slightly Likely	3.93	1.38	1.18	0.98	1.18	2.36
Very Likely	6.43	2.25	1.93	1.61	1.93	3.86

p = .185142237
p > .05

Question 10 – Conference Facilities

What Type of Category Best Describes Your Business?

If Schoolcraft College had assets your company could leverage, what would be your level of interest in those assets? - Conference Facilities	Manufacturing	Non-Manuf.	Public Admin.	Grand Total	% of Category
Extremely Likely	1	6	0	7	0.125000000
Moderately Likely	3	7	2	12	0.214285714
Not at All	5	7	0	12	0.214285714
Slightly Likely	4	5	0	9	0.160714286
Very Likely	5	8	3	16	0.285714286
Grand Total	18	33	5	56	

Chi Square Analysis

Extremely Likely	1	6	0	0.125000000
Moderately Likely	3	7	2	0.214285714
Not at All	5	7	0	0.214285714
Slightly Likely	4	5	0	0.160714286
Very Likely	5	8	3	0.285714286

Expected Values	Manufacturing	Non-Manuf.	Public Admin.
Extremely Likely	2.250000000	4.125000000	0.625000000
Moderately Likely	3.857142857	7.071428571	1.071428571
Not at All	3.857142857	7.071428571	1.071428571
Slightly Likely	2.892857143	5.303571429	0.803571429
Very Likely	5.142857143	9.428571429	1.428571429

p = 0.456041935
p > .05

Which range best describes the number of employees within your company?

If Schoolcraft College had assets your company could leverage, what would be your level of interest in those assets? - Conference Facilities	1-49	50-99	100-199	200-499	500-2499	2500	Grand Total
Extremely Likely	2	2	1	0	0	2	7
Moderately Likely	3	3	1	0	2	3	12
Not at All	6	1	0	1	2	2	12
Slightly Likely	2	0	3	3	2	0	10
Very Likely	7	1	1	1	0	5	15
Grand Total	20	7	6	5	6	12	56

Chi Square Analysis

Survey Values	1-49	50-99	100-199	200-499	500-2499	2500	% of Category
Extremely Likely	2	2	1	0	0	2	0.125000000
Moderately Likely	3	3	1	0	2	3	0.214285714
Not at All	6	1	0	1	2	2	0.214285714
Slightly Likely	2	0	3	3	2	0	0.178571429
Very Likely	7	1	1	1	0	5	0.267857143

Expected Values	1-49	50-99	100-199	200-499	500-2499	2500
Extremely Likely	2.50	0.88	0.75	0.63	0.75	1.50
Moderately Likely	4.29	1.50	1.29	1.07	1.29	2.57
Not at All	4.29	1.50	1.29	1.07	1.29	2.57
Slightly Likely	3.57	1.25	1.07	0.89	1.07	2.14
Very Likely	5.36	1.88	1.61	1.34	1.61	3.21

p = .150323914
p > .05

Question 10 – Continuing Education and Professional Development

What Type of Category Best Describes Your Business?

If Schoolcraft College had assets your company could leverage, what would be your level of interest in those assets? - Continuing Education and Professional Development	Manufacturing	Non-Manuf.	Public Admin.	Grand Total	% of Category
Extremely Likely	1	4	0	5	0.089285714
Moderately Likely	4	11	1	16	0.285714286
Not at All	1	3	0	4	0.071428571
Slightly Likely	1	6	0	7	0.125000000
Very Likely	11	9	4	24	0.428571429
Grand Total	18	33	5	56	

Chi Square Analysis

Survey Values	Manufacturing	Non-Manuf.	Public Admin.	% of Category
Extremely Likely	1	4	0	0.089285714
Moderately Likely	4	11	1	0.285714286
Not at All	1	3	0	0.071428571
Slightly Likely	1	6	0	0.125000000
Very Likely	11	9	4	0.428571429

Expected Values	Manufacturing	Non-Manuf.	Public Admin.
Extremely Likely	1.607142857	2.946428571	0.446428571
Moderately Likely	5.142857143	9.428571429	1.428571429
Not at All	1.285714286	2.357142857	0.357142857
Slightly Likely	2.250000000	4.125000000	0.625000000
Very Likely	7.714285714	14.14285714	2.142857143

p = 0.314130814
p > .05

Which range best describes the number of employees within your company?

If Schoolcraft College had assets your company could leverage, what would be your level of interest in those assets? - Continuing Education and Professional Development	1-49	50-99	100-199	200-499	500-2499	2500	Grand Total
Extremely Likely	3	1	0	0	0	1	5
Moderately Likely	5	0	1	2	3	5	16
Not at All	3	0	0	1	0	0	4
Slightly Likely	1	3	2	0	1	0	7
Very Likely	8	3	3	2	2	6	24
Grand Total	20	7	6	5	6	12	56

Chi Square Analysis

Survey Values	1-49	50-99	100-199	200-499	500-2499	2500	% of Category
Extremely Likely	3	1	0	0	0	1	0.089285714
Moderately Likely	5	0	1	2	3	5	0.285714286
Not at All	3	0	0	1	0	0	0.071428571
Slightly Likely	1	3	2	0	1	0	0.125000000
Very Likely	8	3	3	2	2	6	0.428571429

Expected Values	1-49	50-99	100-199	200-499	500-2499	2500
Extremely Likely	1.79	0.63	0.54	0.45	0.54	1.07
Moderately Likely	5.71	2.00	1.71	1.43	1.71	3.43
Not at All	1.43	0.50	0.43	0.36	0.43	0.86
Slightly Likely	2.50	0.88	0.75	0.63	0.75	1.50
Very Likely	8.57	3.00	2.57	2.14	2.57	5.14

p = .303024446
p > .05

Question 10 – Customized Workforce Training

What Type of Category Best Describes Your Business?

If Schoolcraft College had assets your company could leverage, what would be your level of interest in those assets? - Customized Workforce Training	Manufacturing	Non-Manuf.	Public Admin.	Grand Total	% of Category
Extremely Likely	5	5	1	11	0.196428571
Moderately Likely	6	6	2	14	0.250000000
Not at All	1	5	0	6	0.107142857
Slightly Likely	1	6	0	7	0.125000000
Very Likely	5	11	2	18	0.321428571
Grand Total	18	33	5	56	

Chi Square Analysis

Survey Values	Manufacturing	Non-Manuf.	Public Admin.	% of Category
Extremely Likely	5	5	1	0.196428571
Moderately Likely	6	6	2	0.250000000
Not at All	1	5	0	0.107142857
Slightly Likely	1	6	0	0.125000000
Very Likely	5	11	2	0.321428571

Expected Values	Manufacturing	Non-Manuf.	Public Admin.
Extremely Likely	3.535714286	6.482142857	0.982142857
Moderately Likely	4.500000000	8.250000000	1.250000000
Not at All	1.928571429	3.535714286	0.535714286
Slightly Likely	2.250000000	4.125000000	0.625000000
Very Likely	5.785714286	10.60714286	1.607142857

p = 0.592794339
p > .05

Which range best describes the number of employees within your company?

If Schoolcraft College had assets your company could leverage, what would be your level of interest in those assets? - Customized Workforce Training	1-49	50-99	100-199	200-499	500-2499	2500	Grand Total
Extremely Likely	6	0	2	0	1	2	11
Moderately Likely	6	1	2	1	0	4	14
Not at All	3	0	1	1	0	1	6
Slightly Likely	0	1	1	1	4	0	7
Very Likely	5	5	0	2	1	5	18
Grand Total	20	7	6	5	6	12	56

Chi Square Analysis

Survey Values	1-49	50-99	100-199	200-499	500-2499	2500	% of Category
Extremely Likely	6	0	2	0	1	2	0.196428571
Moderately Likely	6	1	2	1	0	4	0.250000000
Not at All	3	0	1	1	0	1	0.107142857
Slightly Likely	0	1	1	1	4	0	0.125000000
Very Likely	5	5	0	2	1	5	0.321428571

Expected Values	1-49	50-99	100-199	200-499	500-2499	2500
Extremely Likely	3.93	1.38	1.18	0.98	1.18	2.36
Moderately Likely	5.00	1.75	1.50	1.25	1.50	3.00
Not at All	2.14	0.75	0.64	0.54	0.64	1.29
Slightly Likely	2.50	0.88	0.75	0.63	0.75	1.50
Very Likely	6.43	2.25	1.93	1.61	1.93	3.86

p = .303024446
p > .05

Question 10 – Relevant Academic Programming

What Type of Category Best Describes Your Business?

If Schoolcraft College had assets your company could leverage, what would be your level of interest in those assets? - Relevant Academic Programming	Manufacturing	Non-Manuf.	Public Admin.	Grand Total	% of Category
Extremely Likely	0	3	0	3	0.053571429
Moderately Likely	6	12	1	19	0.339285714
Not at All	0	5	0	5	0.089285714
Slightly Likely	4	7	2	13	0.232142857
Very Likely	8	6	2	16	0.285714286
Grand Total	18	33	5	56	

Chi Square Analysis

Survey Values	Manufacturing	Non-Manuf.	Public Admin.	% of Category
Extremely Likely	0	3	0	0.053571429
Moderately Likely	6	12	1	0.339285714
Not at All	0	5	0	0.089285714
Slightly Likely	4	7	2	0.232142857
Very Likely	8	6	2	0.285714286

Expected Values	Manufacturing	Non-Manuf.	Public Admin.
Extremely Likely	0.964285714	1.767857143	0.267857143
Moderately Likely	6.107142857	11.19642857	1.696428571
Not at All	1.607142857	2.946428571	0.446428571
Slightly Likely	4.178571429	7.660714286	1.160714286
Very Likely	5.142857143	9.428571429	1.428571429

p = 0.290055722
p > .05

Which range best describes the number of employees within your company?

If Schoolcraft College had assets your company could leverage, what would be your level of interest in those assets? - Relevant Academic Programming	1-49	50-99	100-199	200-499	500-2499	2500	Grand Total
Extremely Likely	1	0	0	1	0	1	3
Moderately Likely	7	2	0	2	1	7	19
Not at All	2	1	0	1	1	0	5
Slightly Likely	3	2	2	1	4	1	13
Very Likely	7	2	4	0	0	3	16
Grand Total	20	7	6	5	6	12	56

Chi Square Analysis

Survey Values	1-49	50-99	100-199	200-499	500-2499	2500	% of Category
Extremely Likely	1	0	0	1	0	1	0.053571429
Moderately Likely	7	2	0	2	1	7	0.339285714
Not at All	2	1	0	1	1	0	0.089285714
Slightly Likely	3	2	2	1	4	1	0.232142857
Very Likely	7	2	4	0	0	3	0.285714286

Expected Values	1-49	50-99	100-199	200-499	500-2499	2500
Extremely Likely	1.07	0.38	0.32	0.27	0.32	0.64
Moderately Likely	6.79	2.38	2.04	1.70	2.04	4.07
Not at All	1.79	0.63	0.54	0.45	0.54	1.07
Slightly Likely	4.64	1.63	1.39	1.16	1.39	2.79
Very Likely	5.71	2.00	1.71	1.43	1.71	3.43

p = .222415524
p > .05

Question 10 – Shared Services

What Type of Category Best Describes Your Business?

If Schoolcraft College had assets your company could leverage, what would be your level of interest in those assets? - Shared Services	Manufacturing	Non-Manuf.	Public Admin.	Grand Total	% of Category
Extremely Likely	1	3	1	5	0.094339623
Moderately Likely	6	8	1	15	0.283018868
Not at All	4	5	1	10	0.188679245
Slightly Likely	3	7	1	11	0.207547170
Very Likely	3	8	1	12	0.226415094
Grand Total	17	31	5	53	

Chi Square Analysis

Survey Values	Manufacturing	Non-Manuf.	Public Admin.	% of Category
Extremely Likely	1	3	1	0.094339623
Moderately Likely	6	8	1	0.283018868
Not at All	4	5	1	0.188679245
Slightly Likely	3	7	1	0.207547170
Very Likely	3	8	1	0.226415094
	17	31	5	

Expected Values	Manufacturing	Non-Manuf.	Public Admin.
Extremely Likely	1.603773585	2.924528302	0.471698113
Moderately Likely	4.811320755	8.773584906	1.415094340
Not at All	3.207547170	5.849056604	0.943396226
Slightly Likely	3.528301887	6.433962264	1.037735849
Very Likely	3.849056604	7.018867925	1.132075472

p = 0.97788799
p > .05

Which range best describes the number of employees within your company?

If Schoolcraft College had assets your company could leverage, what would be your level of interest in those assets? - Shared Services	1-49	50-99	100-199	200-499	500-2499	2500	Grand Total
Extremely Likely	3	1	1	0	0	0	5
Moderately Likely	4	2	0	2	0	7	15
Not at All	6	1	0	1	0	2	10
Slightly Likely	2	1	3	1	4	0	11
Very Likely	4	2	2	0	1	3	12
Grand Total	19	7	6	4	5	12	53

Chi Square Analysis

Survey Values	1-49	50-99	100-199	200-499	500-2499	2500	% of Category
Extremely Likely	3	1	1	0	0	0	0.094339623
Moderately Likely	4	2	0	2	0	7	0.283018868
Not at All	6	1	0	1	0	2	0.188679245
Slightly Likely	2	1	3	1	4	0	0.207547170
Very Likely	4	2	2	0	1	3	0.226415094

Expected Values	1-49	50-99	100-199	200-499	500-2499	2500
Extremely Likely	1.79	0.66	0.57	0.38	0.47	1.13
Moderately Likely	5.38	1.98	1.70	1.13	1.42	3.40
Not at All	3.58	1.32	1.13	0.75	0.94	2.26
Slightly Likely	3.94	1.45	1.25	0.83	1.04	2.49
Very Likely	4.30	1.58	1.36	0.91	1.13	2.72

p = .054083867
p > .05

Question 10 – Training Facilities

What Type of Category Best Describes Your Business?

If Schoolcraft College had assets your company could leverage, what would be your level of interest in those assets? - Training Facilities	Manufacturing	Non-Manuf.	Public Admin.	Grand Total	% of Category
Extremely Likely	3	6	0	9	0.160714286
Moderately Likely	6	8	3	17	0.303571429
Not at All	2	6	1	9	0.160714286
Slightly Likely	4	7	0	11	0.196428571
Very Likely	3	6	1	10	0.178571429
Grand Total	18	33	5	56	

Chi Square Analysis

Survey Values	Manufacturing	Non-Manuf.	Public Admin.	% of Category
Extremely Likely	3	6	0	0.160714286
Moderately Likely	6	8	3	0.303571429
Not at All	2	6	1	0.160714286
Slightly Likely	4	7	0	0.196428571
Very Likely	3	6	1	0.178571429

Expected Values	Manufacturing	Non-Manuf.	Public Admin.
Extremely Likely	2.892857143	5.303571429	0.803571429
Moderately Likely	5.464285714	10.01785714	1.517857143
Not at All	2.892857143	5.303571429	0.803571429
Slightly Likely	3.535714286	6.482142857	0.982142857
Very Likely	3.214285714	5.892857143	0.892857143

p = 0.825817516
p > .05

Which range best describes the number of employees within your company?

If Schoolcraft College had assets your company could leverage, what would be your level of interest in those assets? - Training Facilities	1-49	50-99	100-199	200-499	500-2499	2500	Grand Total
Extremely Likely	5	2	1	0	0	1	9
Moderately Likely	3	2	1	2	3	6	17
Not at All	5	1	1	1	0	1	9
Slightly Likely	4	1	1	1	3	1	11
Very Likely	3	1	2	1	0	3	10
Grand Total	20	7	6	4	6	12	56

Chi Square Analysis

Survey Values	1-49	50-99	100-199	200-499	500-2499	2500	% of Category
Extremely Likely	5	2	1	0	0	1	0.160714286
Moderately Likely	3	2	1	2	3	6	0.303571429
Not at All	5	1	1	1	0	1	0.160714286
Slightly Likely	4	1	1	1	3	1	0.196428571
Very Likely	3	1	2	1	0	3	0.178571429

Expected Values	1-49	50-99	100-199	200-499	500-2499	2500
Extremely Likely	3.21	1.13	0.96	0.64	0.96	1.93
Moderately Likely	6.07	2.13	1.82	1.21	1.82	3.64
Not at All	3.21	1.13	0.96	0.64	0.96	1.93
Slightly Likely	3.93	1.38	1.18	0.79	1.18	2.36
Very Likely	3.57	1.25	1.07	0.71	1.07	2.14

p = .631244221
p > .05

Question 11

What Type of Category Best Describes Your Business?

What would be your level of interest in creating a joint venture with Schoolcraft College?	Manufacturing	Non-Manuf.	Public Adm.	Grand Total	% of Category
Extremely Likely	2	5	0	7	0.125000000
Moderately Likely	7	9	1	17	0.303571429
Not at All	1	6	0	7	0.125000000
Slightly Likely	7	7	0	14	0.250000000
Very Likely	1	6	4	11	0.196428571
Grand Total	18	33	5	56	

Chi Square Analysis

Survey Values	Manufacturing	Non-Manuf.	Public Adm.	% of Category
Extremely Likely	2	5	0	0.125000000
Moderately Likely	7	9	1	0.303571429
Not at All	1	6	0	0.125000000
Slightly Likely	7	7	0	0.250000000
Very Likely	1	6	4	0.196428571

Expected Values	Manufacturing	Non-Manuf.	Public Adm.
Extremely Likely	2.250000000	4.125000000	0.625000000
Moderately Likely	5.464285714	10.01785714	1.517857143
Not at All	2.250000000	4.125000000	0.625000000
Slightly Likely	4.500000000	8.250000000	1.250000000
Very Likely	3.535714286	6.482142857	0.982142857

p = 0.023778255
p < .05

Which range best describes the number of employees within your company?

What would be your level of interest in creating a joint venture with Schoolcraft College?	1-49	50-99	100-199	200-499	500-2499	2500	Grand Total
Extremely Likely	4	1	2	0	0	0	7
Moderately Likely	3	2	1	2	2	7	17
Not at All	4	0	2	1	0	0	7
Slightly Likely	4	2	0	1	3	4	14
Very Likely	5	2	1	1	1	1	11
Grand Total	20	7	6	5	6	12	56

Chi Square Analysis

Survey Values	1-49	50-99	100-199	200-499	500-2499	2500	% of Category
Extremely Likely	4	1	2	0	0	0	0.125000000
Moderately Likely	3	2	1	2	2	7	0.303571429
Not at All	4	0	2	1	0	0	0.125000000
Slightly Likely	4	2	0	1	3	4	0.250000000
Very Likely	5	2	1	1	1	1	0.196428571

Expected Values	1-49	50-99	100-199	200-499	500-2499	2500
Extremely Likely	2.50	0.88	0.75	0.63	0.75	1.50
Moderately Likely	6.07	2.13	1.82	1.52	1.82	3.64
Not at All	2.50	0.88	0.75	0.63	0.75	1.50
Slightly Likely	5.00	1.75	1.50	1.25	1.50	3.00
Very Likely	3.93	1.38	1.18	0.98	1.18	2.36

p = .317288065
p > .05

Question 12

What Type of Category Best Describes Your Business?

Does your company have or is interested in apprenticeship (on the job training with company specific education) programs?	Manufacturing	Non-Manuf.	Public Admin.	Grand Total	% of Category
No	4	11	3	18	0.321428571
Yes, we are intereseted	8	12	2	22	0.392857143
Yes, we have them	6	10	0	16	0.285714286
Grand Total	18	33	5	56	

Chi Square Analysis

Survey Values	Manufacturing	Non-Manuf.	Public Admin.	% of Category
No	4	11	3	0.125000000
Yes, we are intereseted	8	12	2	0.303571429
Yes, we have them	6	10	0	0.125000000

Expected Values	Manufacturing	Non-Manuf.	Public Admin.
No	5.785714286	10.60714286	1.607142857
Yes, we are intereseted	7.071428571	12.96428571	1.964285714
Yes, we have them	5.142857143	9.428571429	1.428571429

p = 0.466834735
p > .05

Which range best describes the number of employees within your company?

Does your company have or is interested in apprenticeship (on the job training with company specific education) programs?	1-49	50-99	100-199	200-499	500-2499	2500	Grand Total
No	8	2	2	1	1	4	18
Yes, we are intereseted	10	3	2	0	3	4	22
Yes, we have them	2	2	2	4	2	4	16
Grand Total	20	7	6	5	6	12	56

Chi Square Analysis

Survey Values	1-49	50-99	100-199	200-499	500-2499	2500	% of Category
No	8	2	2	1	1	4	0.321428571
Yes, we are intereseted	10	3	2	0	3	4	0.392857143
Yes, we have them	2	2	2	4	2	4	0.285714286

Expected Values	1-49	50-99	100-199	200-499	500-2499	2500
No	6.43	2.25	1.93	1.61	1.93	3.86
Yes, we are intereseted	7.86	2.75	2.36	1.96	2.36	4.71
Yes, we have them	5.71	2.00	1.71	1.43	1.71	3.43

p = .339224524
p > .05

Question 13

What Type of Category Best Describes Your Business?

If your answer to question 12 was yes, what would be your level of interest in creating an apprenticeship program with your company and Schoolcraft College?	Manufacturing	Non-Manuf.	Public Adm.	Grand Total	% of Category
Extremely Interested	2	4	0	6	0.139534884
Moderately Interested	5	9	2	16	0.372093023
Not Applicable	2	2	2	6	0.139534884
Not at All	0	2	0	2	0.046511628
Slightly Interested	1	2	0	3	0.069767442
Very Interested	5	5	0	10	0.23255814
Grand Total	15	24	4	43	

Chi Square Analysis

Survey Values	Manufacturing	Non-Manuf.	Public Adm.	% of Category
Extremely Interested	2	4	0	0.139534884
Moderately Interested	5	9	2	0.372093023
Not Applicable	2	2	2	0.139534884
Not at All	0	2	0	0.046511628
Slightly Interested	1	2	0	0.069767442
Very Interested	5	5	0	0.232558140

Expected Values	Manufacturing	Non-Manuf.	Public Adm.
Extremely Interested	2.093023256	3.348837209	0.558139535
Moderately Interested	5.581395349	8.930232558	1.488372093
Not Applicable	2.093023256	3.348837209	0.558139535
Not at All	0.697674419	1.11627907	0.186046512
Slightly Interested	1.046511628	1.674418605	0.279069767
Very Interested	3.488372093	5.581395349	0.930232558

p = 0.466774234
p > .05

Which range best describes the number of employees within your company?

If your answer to question 12 was yes, what would be your level of interest in creating an apprenticeship program with your company and Schoolcraft College?	1-49	50-99	100-199	200-499	500-2499	2500	Grand Total
Extremely Interested	2	1	1	0	0	2	6
Moderately Interested	6	1	2	1	2	4	16
Not Applicable	4	0	1	0	0	1	6
Not at All	0	0	0	0	2	0	2
Slightly Interested	1	3	0	1	1	0	6
Very Interested	3	2	1	2	0	1	9
Grand Total	16	5	5	4	5	8	43

Chi Square Analysis

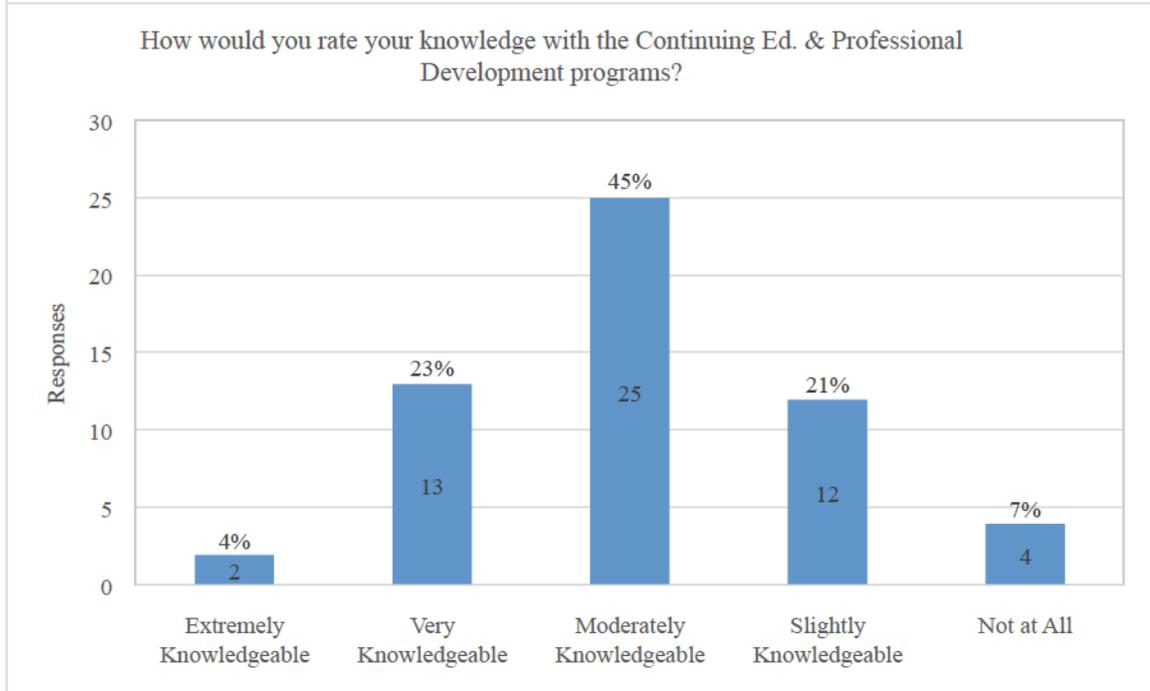
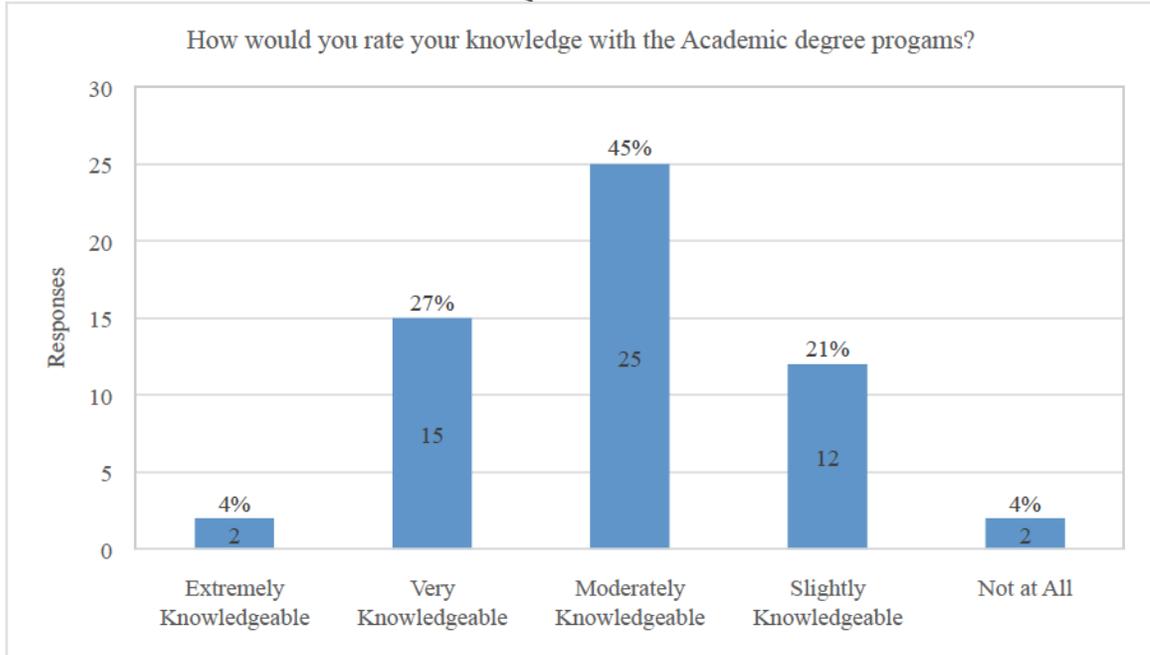
Survey Values	1-49	50-99	100-199	200-499	500-2499	2500	% of Category
Extremely Interested	2	1	1	0	0	2	0.139534884
Moderately Interested	6	1	2	1	2	4	0.372093023
Not Applicable	4	0	1	0	0	1	0.139534884
Not at All	0	0	0	0	2	0	0.046511628
Slightly Interested	1	3	0	1	1	0	0.139534884
Very Interested	3	2	1	2	0	1	0.209302326

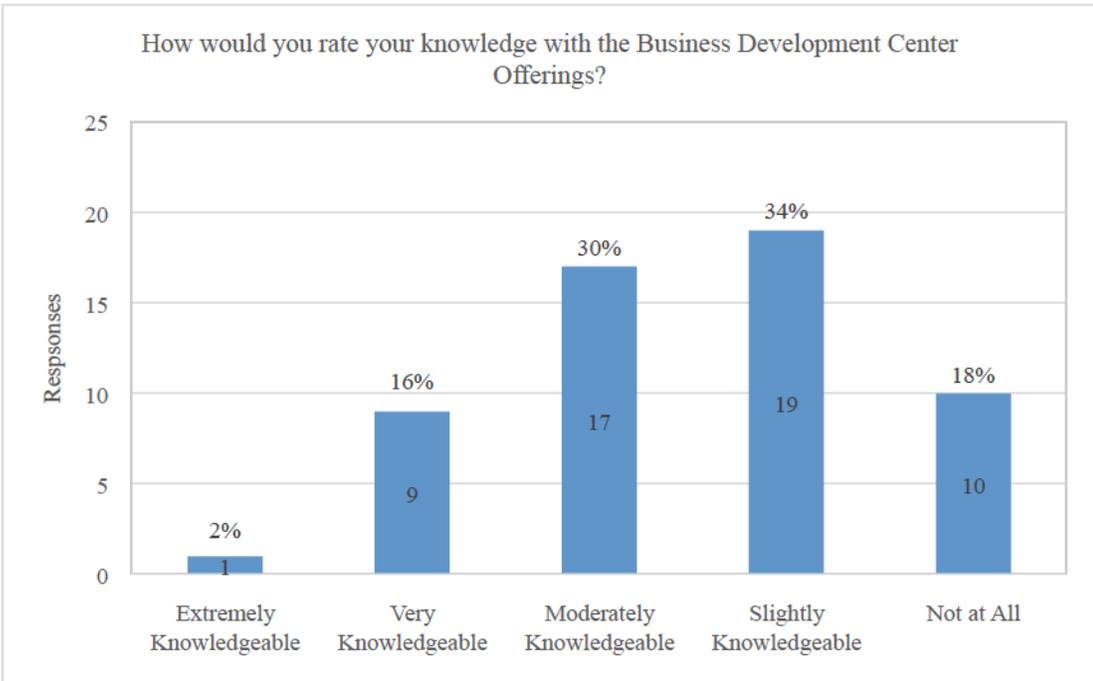
Expected Values	1-49	50-99	100-199	200-499	500-2499	2500
Extremely Interested	2.23	0.70	0.70	0.56	0.70	1.12
Moderately Interested	5.95	1.86	1.86	1.49	1.86	2.98
Not Applicable	2.23	0.70	0.70	0.56	0.70	1.12
Not at All	0.74	0.23	0.23	0.19	0.23	0.37
Slightly Interested	2.23	0.70	0.70	0.56	0.70	1.12
Very Interested	3.35	1.05	1.05	0.84	1.05	1.67

p = .067429389
p > .05

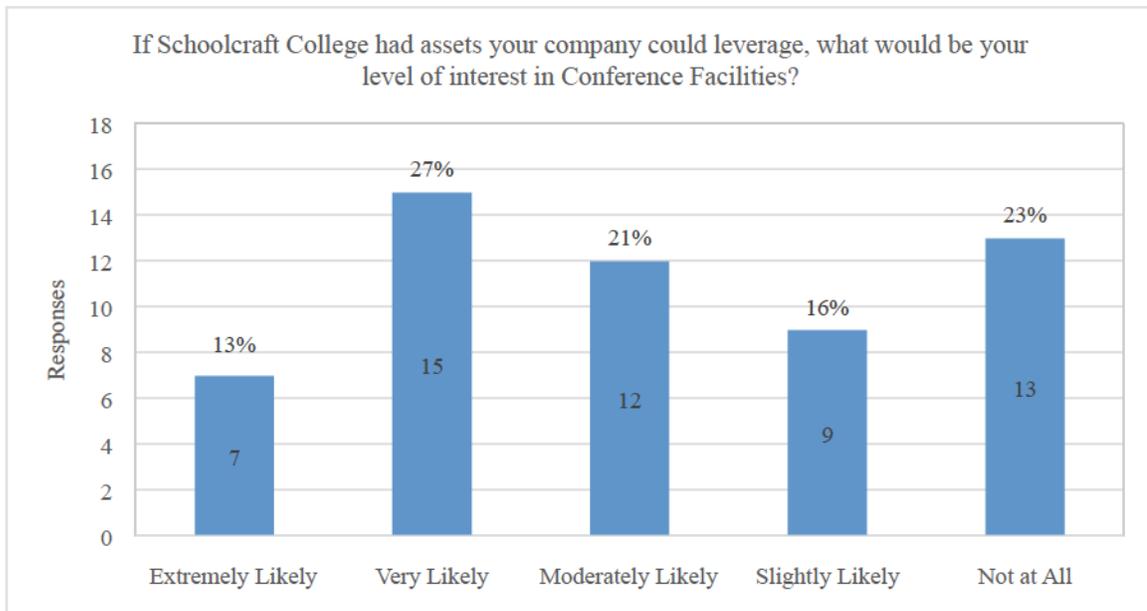
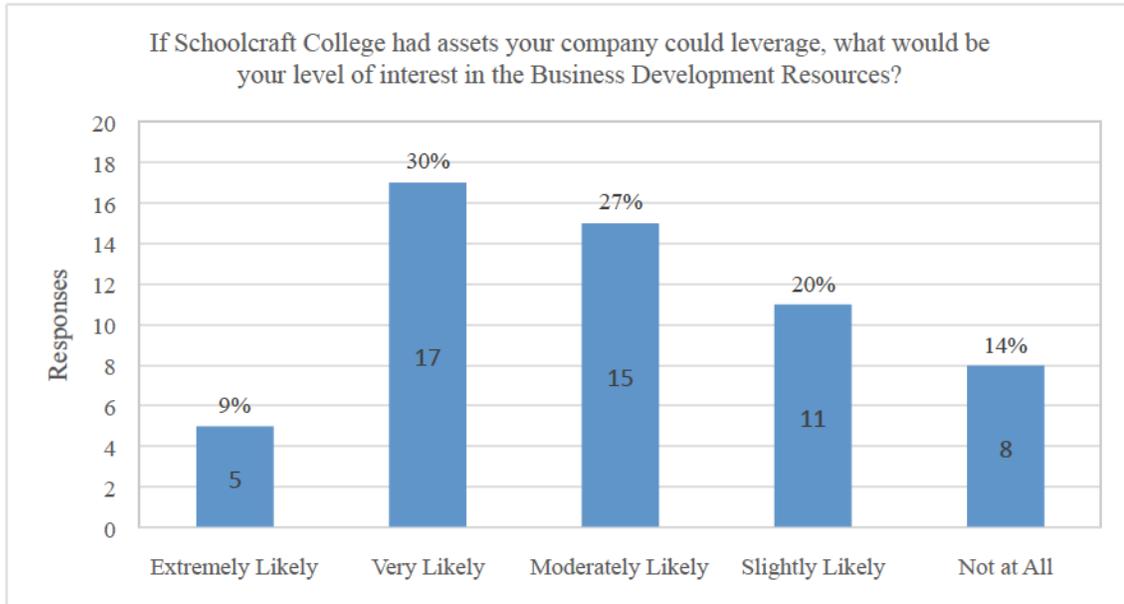
APPENDIX E: GRAPHS FOR QUANTITATIVE SURVEY QUESTIONS 8 AND 10

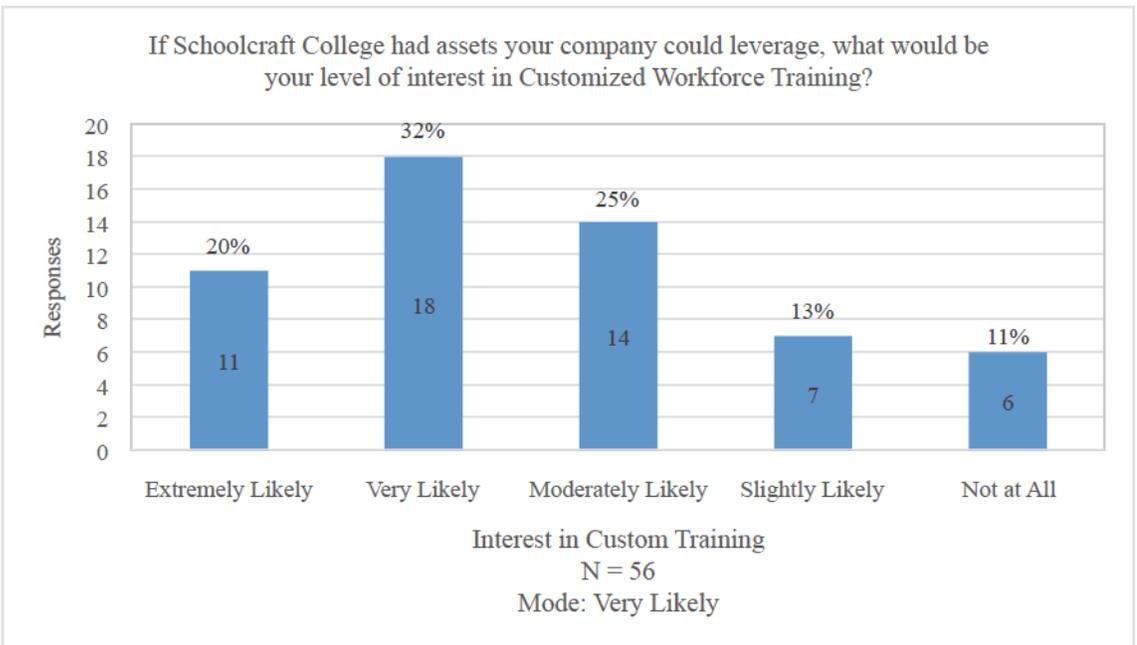
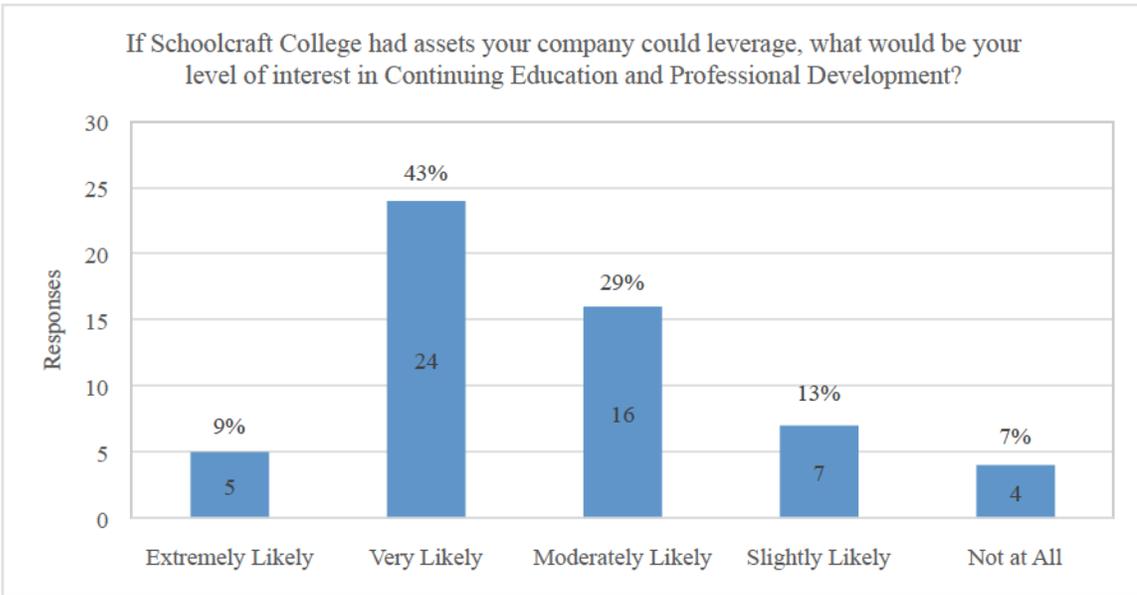
Question 8

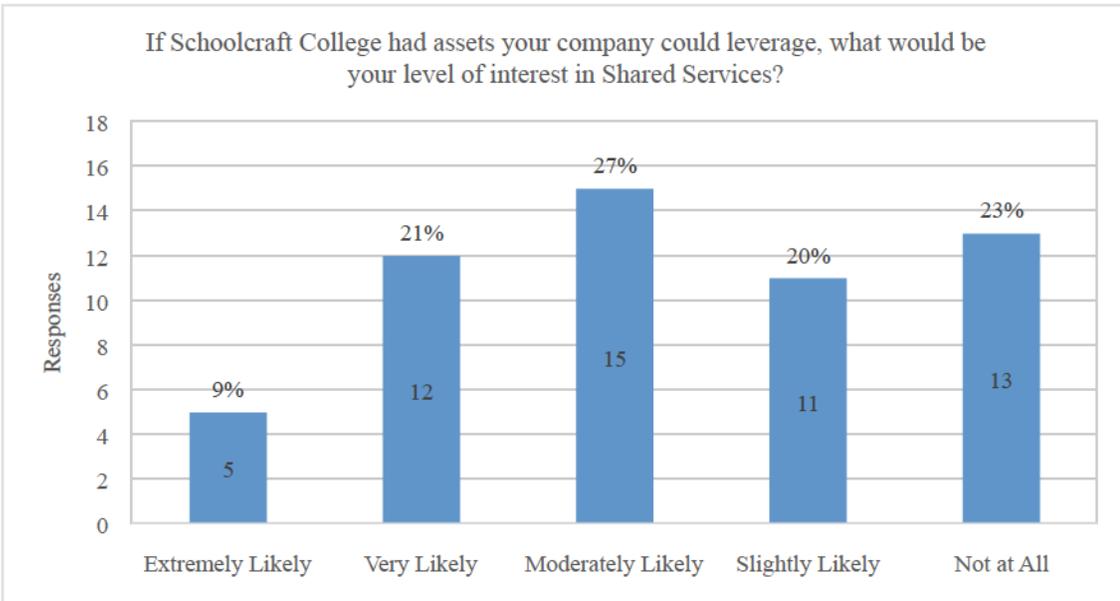
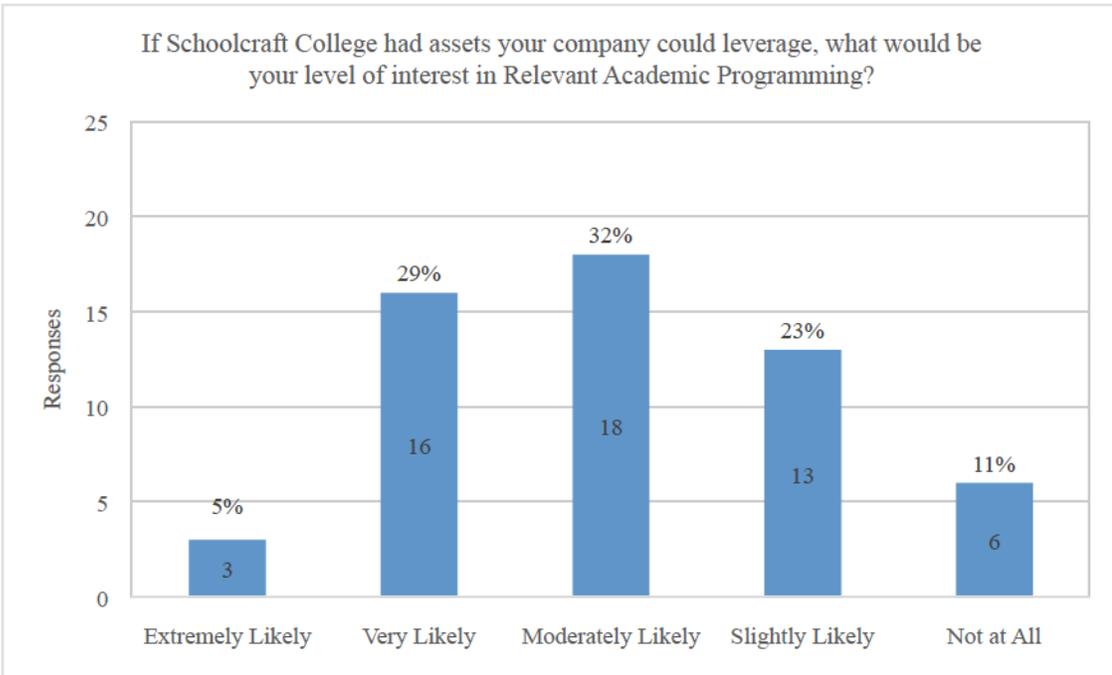




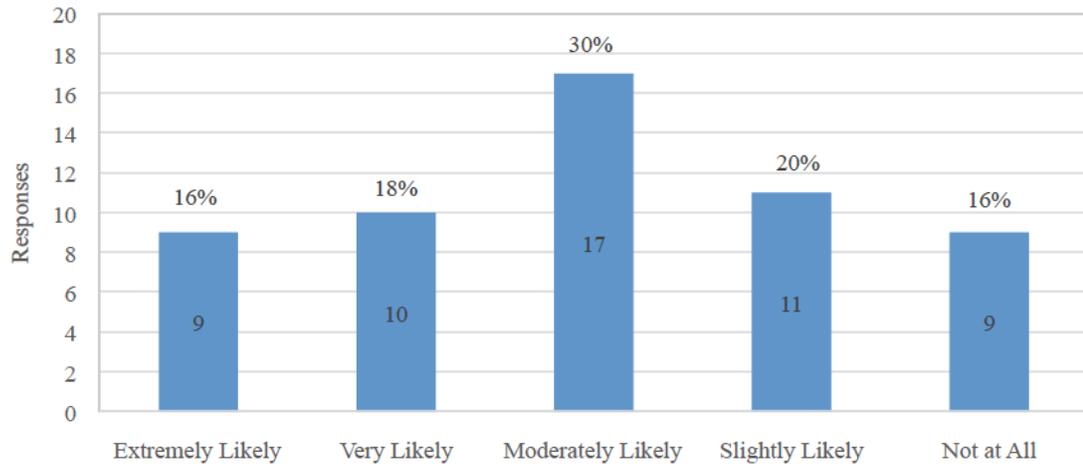
Question 10







If Schoolcraft College had assets your company could leverage, what would be your level of interest in Training Facilities?



APPENDIX F: SCHOOLCRAFT COLLEGE DIAGRAM

