

The Future of Course Work: Customizing Community College Curricula to Meet Industrial Needs

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Abstract – Training workers for higher skilled jobs in the United States has been a task primarily placed on community colleges. The community college system has been responsible for up-skilling workers with stackable credentials specific to job placement mostly related to Applied Science curriculum programs. Government entities have also tried to answer the call for higher skilled workers by allocating funding for training initiatives. This paper focuses on how a rural community college in North Carolina faced the challenge of customizing courses to satisfy the demand from local industry. Strategies for implementation, best practices from experience, and financial and administrative barriers are presented.

Keywords: Workforce Development, Customized Training, Stackable Credentials, Community College.

WORKFORCE DEVELOPMENT AND THE COMMUNITY COLLEGE

Workforce development has been strategically redefined since the turn of the 21st century. Despite economic downturn, many forecasts show that skilled jobs are plentiful or will be in the near future, but skilled employees will not be available to fill them ^{[1], [2]}. This ‘skill gap’ is the driving force that has caught the eye of several government entities. Funding from the Federal and state governments has been allocated to help resolve the mismatch of skills ^{[7], [9], [10], [11]}. Educational institutions have been left with the task of figuring out how to meet this demand and receive the much needed funding.

The US Department of Labor (DOL) has encouraged a modular approach in educating and training today’s workforce ^[1]. Although used interchangeably in everyday conversation, these two terms, educating and training, are now purposefully different when referring to workforce development. Education has long been thought of as a process in which the student is exposed to new ideas and concepts over a period of time. Whereas, training is thought to include a hands-on approach where an individual is held accountable for demonstrating an understanding and, often, a performance task to ensure competence in a specific skill ^{[3], [13]}. Training, or what is commonly referred to today as up-skilling, is typically short and to the point, and it is the latter that has been gaining headway with government entities ^{[1], [12]}.

Up-skilling the workforce involves training that will lead to an industry recognized credential. In the community college system, students are already obtaining an educational credential, but with customized training laced in regular program courses, students are also gaining stackable credentials ^{[5], [12]}. One of the leading efforts in providing students with a stackable credential came with the development and initiation of the Career Readiness Certification (CRC) ^[2]. In North Carolina, implementation of the CRC was left up to the community college. This initiative was backed by the workforce development boards across the state and is still widely encouraged for new and existing industry to use as a means of screening in the hiring process ^[2].

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While the CRC is regional in nature, a widespread movement began with the DOL Employment and Training Administration (ETA). In the early to mid-2000s, the ETA worked with several partners to develop an Advanced Manufacturing Competency Model (AMCM)^[13]. The model came to fruition and served as a framework for what advanced manufacturing employers wanted their employees to know coming into the workplace. The AMCM, as well as other related models, outlines soft skills and competencies specific to job placement^{[4], [13]}. From the recent publications and focused government attention on workforce development, most researchers commonly refer to the community college system as the medium for getting workers back to work^{[3], [5], [8], [10]}. While the community college is referred to as an organization, the real burden falls to the internal components of that organization to complete the task.

The Inside Look at Community College Faculty

The community college system is a unique entity that serves as the hub of innovative partnerships and lofty aspirations. When there is a new trend handed down by governing bodies, the community college is often the Cinderella team that gets the job done. The majority of community colleges are small organizations with only a few thousand students^[15]. The funding allotted to these schools is directly proportional to the numbers of their small student body populations. Community college administrators face challenges in finding qualified faculty because the pay versus workload is not comparable to industry, especially in Applied Science and Technology areas. However, for the most part, the community college is defined by its faculty members.

The term, community college instructor, is a bit of a misnomer since instruction is only about 35% of a community college faculty member's work duties. After signing on, a full time faculty member who teaches an Applied Science program can expect to be an academic advisor, a maintenance specialist, a networking and software installation technician, a curriculum designer, a customized program trainer, a purchasing expert, an assessment guru, a program evaluator, a student recruiter, and the chairman of at least one campus committee. In the same instructor's free time, he also needs to acquire a higher degree, obtain enough professional development to stay current in his field, and have constant contact with industry to make sure the program is up to par. Despite the uninviting picture this job description paints, community college instructors are typically the most hardworking, motivated individuals in the educational realm. Community college instructors understand the students' need to be successful. They also understand that the community college is a bridge that separates impending desperation and a first, or in some cases a second, chance at life. If that bridge fails, the student can be washed away in a river of hopelessness. It is for these reasons alone that the community college thrives on workforce development even in the midst of economic turmoil and government bureaucracy.

A RURAL NC COMMUNITY COLLEGE MEETS THE CHALLENGE

Coming from Applied Sciences programs where it was common to have 100% job placement, the economic crisis of 2008 really caused alarm in rural Western North Carolina. We had our share of laid off textile workers cycle through over the prior decade with many sad stories of lost pension and desolate families. Fortunately, during that decade other manufacturing facilities were going strong, and workers could recoup their hurt pride and their pocketbooks with a decent job relatively close to home. However, in August 2008, this all changed. There were the usual inquiring phone calls at the beginning of that fall semester from employers who wanted to hire good students, but soon those calls stopped. We started following up with return phone calls and emails only to be told that companies were now on a hiring freeze. The domino effect was evident all over our service area and nearby region. In one semester, our enrollment jumped 30% due to layoffs and shut downs. Not without gratitude for the increase in student numbers, we worried about what we would tell these students as they questioned the kind of job they could get after working through a two-year degree. Somehow looking them in the eye and being able to promise that second chance would not happen without a sense of dread.

Changes Customized Training Made for Curriculum Students

A ray of hope came with a phone call from our customized training and development coordinator. A power plant was to be constructed nearby, and the contracting company needed pipefitters, welders, millwrights, and construction workers. We provided custom courses for industry before and dabbled in a couple industry recognized credentials, but when Shaw came into the picture, workforce development took on a whole new meaning for our small rural community college. All of the technical instructors were to be trained to teach National Center for Construction Education and Research (NCCER) curriculums in their field. We found a sponsoring agency required

by NCCER. Being so excited to share the wealth, we invited instructors from a neighboring community college and professionals around our service area to take part in the train-the-trainer course. We were asked to train people in a short time of six to eight weeks. Everyone knew a degree could not be completed in that amount of time, but we were all too eager to have students getting placed in decent paying jobs. As promised, by fall 2009, we developed a new pipefitting curriculum through continuing education and were cranking out graduates with NCCER credentials in several disciplines to work for Shaw in the construction of the new power plant.

Although, we were placing nearly all students who completed the pipefitting, welding, and construction NCCER training, college administrators and community economic groups felt like we were placing all of our eggs in one basket. They began looking for other specialized training we could offer. We started conducting various training courses such as forklift and scissor lift operators. These courses were short and did not gain the public favor like the work we did for Shaw. However, our luck was about to change again because Facebook was coming to town. Our customized training coordinator was able to contact the contracting company and line up training for them. Of course, building a data center is somewhat different than building a power plant, but the economic distress in our service area was still fresh. Again, we were happy to develop a new curriculum in steel studded construction. Again, instructors were trained, and we delivered a short course that successfully trained students to work for DPR building the new Facebook facility.

While the facility was still in progress, we were approached by Facebook with the additional need for data center employees. Facebook graciously donated a server rack system and back-up power supply to train potential employees. By all rights, when a company wants to donate a piece of equipment worth more than our entire division equipment budget for two years, the answer is going to be, “We will do whatever it takes.” Since there was no third party credentialing agent in data center technology, we had to rely solely on our own efforts to develop a data center boot camp that came to be known as the Data Center Institute (DCI). This time, there was no train-the-trainer course we could rely on. Instead, faculty poured their own time and effort into research and development, and on occasion, they obtained guidance from the Facebook operations manager. By the time DCI was ready to roll out, there were more than 1000 man hours in the project. This time training was completed in two weeks instead of the previous six to eight week sessions. Faculty taught in eight hour sessions for nine days. At the end, the students were tested. Those who past the exam with 80% or higher were guaranteed an interview with Facebook. DCI became the stackable credential in data center training. Of course, the prestige of Facebook could not go unnoticed. The college was recognized by the League of Innovations, and the instructors involved in creating the custom training course were extended a special invitation to present at the League’s 2012 Innovator Spotlight Virtual Event.

From 2009 to 2012, our students obtained over 1600 stackable credentials in various training modules. Some of these credentials were strictly through customized training while some, by that time, were carried over into curriculum courses. The success we could boast about did not come without a price. Soon administrators and the customized training department detected that faculty may not be the super humans they were once thought to be. Faculty did need time for rest and preferred getting paid for continuous overload efforts in sharing their expertise. It was at this point that administration had to step back and re-evaluate how to approach customized training and development with a new perspective.

MAKING CUSTOMIZED TRAINING OPPORTUNITIES WORK FOR YOUR COMMUNITY COLLEGE

Even the well-thought out plans seem to fail on occasion. As Bill Gates ^[6] said, “It is fine to celebrate success, but it is more important to heed the lessons of failure.” We were successful because our students became successfully employed, and companies would become successful with good employees. In the heat of that success, a feeling of discontent bled through the very people that made it possible, the faculty members. Administration was so caught up in making things happen, we gave little thought about adverse effects that could actually be caused within the organization. As it happens, our small rural community college was not alone in these sentiments. Ezarik ^[5] discusses the impact of increased recognition of community colleges for solving the workforce development problems but with recognition comes increased expectations. It is administration’s role to find equilibrium between the two that is right for your community college.

Strategies for Implementation

To prevent undue stress and continuous overload for full time faculty, we started an adjunct pool of good personnel. One way we have been successful is to look at nearby university systems for guidance. It is important for many reasons to reach out to university partners, but having a personal relationship with faculty in related programs can save time and energy with adjunct searches. They can recommend past students or other professionals they are familiar with which can increase your network. Another way we have been successful is asking industrial partners for part time services. Industries often have experienced individuals with higher degrees who are willing to teach on an occasional basis. Recently, our welding instructors attended a two week training course for American Welding Society (AWS) certification. While they were gone, the department ran with substitute instructors provided by partner industries. This strategy helped two fold. Students did not lose lab time because the substitutes were trained professionals in the welding field, and it provided real time feedback for program improvements over an extended period that a short advisory board meeting could never accomplish.

A major part of initiating a stackable credential to help put students back to work is obtaining funding. Grants and other funding sources are further discussed in another section, but are mentioned here because an overlying issue with implementation is making sure you have proper space and equipment in existing labs. Most often grant funds do not cover major construction efforts. Consideration needs to be given to equipment, of course, but aspects that are overlooked when purchasing equipment are the electrical issues, delivery, installation, and possible outside certifications, such as from Underwriters Laboratory (UL), of machinery. Even if a grant was received to cover the purchase of a piece of equipment, the actual costs incurred may be over the projected cost by far.

In addition, with customized training and stackable credentials comes paperwork. Instructors are already over taxed with regular curriculum paperwork. From experience, it is better to spend funds to hire a secretary than to be audited by the credentialing agency for not completing their paperwork fully or properly. A part or full time secretary can be used to handle credential paperwork, help train lab and teacher assistants, keep track of inventory, and can fill in for a very short time period when instructors are called away or needed unexpectedly.

Community colleges should continuously network with surrounding government bodies. Involve your local Economic Development Corporation (EDC) and other planning and development partners before taking on a new credential or training process. Likely, these groups are working toward the same goals as you are. It is never surprising to find out how little communication truly happens within the same community. The community college is recognized as a leader for workforce endeavors, but locally services can go unnoticed or ignored. It is the administration's duty to inform local governing bodies of changes and updates. For example, we have annual events showcasing some of our programs to high school students. On one particular year, a few members of a local government agency were invited to tour while the students were there. As we were walking through the lab areas, one of the agency members commented that he never knew there was a machining program at the college. This agency is one of the first to talk to potential industry coming to our service area, and some of the members were not knowledgeable enough to talk about their own local community college offerings?

Best Practices Based on Learning Experience

Our full time instructors were frequently asked to conduct customized training courses. In our organizational structure, customized training falls under the continuing education department where contracts are somewhat different. Instructors were getting paid to teach a class, but many were putting in a large number of personal hours to develop a custom course specific to that industry. Developmental time could include meetings with industry representatives, time in the company's facility, ordering of supplies, research on processes, and actual curriculum development. These tasks became a burden to faculty over time because their regular workload continued. Soon, administration faced opposition. Pay for developmental time seemed to be a good way to boost morale. Of course, getting human resources and the business office on board took some time. We developed guidelines and procedures for payment, and even gave retro pay to full time employees who conducted customized courses within the last fiscal year.

Another strategy we have looked at for faculty workload is to have customized courses through the continuing education department be part of their regular duties, thus, lessening their curriculum load. From an administrative perspective, you have to be careful in giving up too much to another department especially in Applied Science curriculum programs where enrollment can fluctuate. Your department will still be accountable for showing how

productive each program is, and during tough economic times, at least on paper those programs that were shared with customized training courses may come up short.

Furthermore, continuing education courses can be great for short training sessions at any time, but the student is at a loss if he wants to build upon his skill toward a college certificate, diploma, or degree. One way we have considered making it more beneficial and user friendly to the student is to design customized courses equal in the number of hours as a similar curriculum course, so credit can be transferable. Once we know that demand is steady, we will incorporate custom courses, which usually have that stackable credential, as part of the regular curriculum program. It is up to administration and faculty to decide what is right for them financially, but ultimately, the college should do what most benefits the student and answers the demand from local industry.

Many times the call for stackable credentials and customized training courses comes from new industry moving into your service area. Start-up companies may not know what they need up front. Generally, plant managers or higher level supervisors will be the first to meet with the EDC and the community college to set up training projects that are likely funded by the state government based on the number of employees to be hired. Projects are written through the customized training department of the community college and have to be thorough in describing training needs for up to three years. Plant managers will have a good overview, but may not have complete details. Since training from Applied Science areas is highly sought after, it is important that representatives from the Applied Science department are present for discussions that will help new companies think through their processes. Applied Science administration and faculty gain knowledge about the company, develop personal relationships with the company's employees, and they have a better understanding in how the college can best serve them.

As discussions progress, be careful what you promise in training initiatives. It is easy to say yes to everything an industry asks for, but when it comes to delivering, the community college may not have the resources or the man power to make it happen. On the flip side, turning down a training opportunity may result in a lost connection with that company. Companies are looking to non-profit entities, as well as, private sector groups that can deliver on demand^[14]. Smaller community colleges may have a harder time competing without proper curriculum management and allocation of funds.

The last best practice to mention is to remember to say thank you to those involved. Whether it is developing a custom course, undergoing training to start a new credential, or just being present at meetings, let your community college employees, especially faculty, know how much you appreciate their efforts.

Ways to Approach Financial and Administrative Barriers

Faculty morale may not be the only alarm for administration where workforce development efforts are concerned. Professional development plays a major role in offering stackable credentials and customized courses. Professional development can be costly and possibly lead to turnover among your faculty. In order to offer a credential to students, faculty must be authorized themselves. Community colleges put their investments on the line by sending individuals to specialized train-the-trainer courses. Suddenly, a good faculty member, who was already highly qualified to make more money in industry, is offered a package deal that he just cannot refuse. Unfortunately, we speak from experience at our community college. The very companies you offer customized training services to may entice your faculty to come to work for them. This is, yet, another reason to develop good working relationships both inside and outside an organization.

Since efforts to work alongside local government entities are already underway in implementation strategies and best practices, administration is smart to use information gained to apply for grants and other outside funding. Granting agencies want to see new jobs created and job retention numbers. Most of the time companies are reserved in making promises, or even sharing a potential need for hires, unless they may be getting something out of it too. Prior to 2008, we had always stayed up-to-date with advisory board meetings, but as the economy shifted, many of our contacts were no longer at the companies. In some cases, the companies were no longer in business. We struggled to keep advisory members for our Applied Science programs, much less, a good standing relationship to receive letters of support needed for granting agencies. In addition to meeting with new companies about customized training efforts, we started relying on our customized training department to talk with human resource representatives at various existing companies. We found that it is important to be a part of the action as much as possible, and companies will grow accustomed to calling you for their needs.

Another advantage of familiarization is the comfort level of being able to ask for donations of software and equipment. The donations do not even have to be directly from the company. In some cases, when a company makes a large purchase with a vendor, that vendor will provide training or training equipment for free. Offer to use your college facilities to house the training equipment. Talk to their vendors directly to see if they have education incentive packages that will place a piece of equipment in a school as long as the industrial company makes a set investment amount with the vendor. Also, request that your faculty be allowed to job shadow or train with company members to provide future services if needed.

Be aware that plant managers will talk amongst themselves. Do not offer something that your organization cannot deliver. You cannot be an expert in everything. If it is not feasible to deliver training in the amount of time they require, look for an outside supplier that you can hire through the college. If that cannot happen, be sure to have partner agencies you trust to recommend. Your reputation as a college will go a long way, but one bad experience can take years to turn around. Give yourself as much flexibility as possible by advertising for courses and positions in advance.

Future Research and Practices in Customized Training

With so many different types of credentials, it is hard for community colleges and industries, alike, to find exactly what suits them. In many cases, industries look to the community college for guidance. It is important to find the right credentials that will, in due course, help your service area the most. There is a push for standards in credentialing with umbrella agencies such as the National Association of Manufacturers (NAMS)^{[7], [11]}. Umbrella agencies are working to consolidate credentials into career clusters that are pertinent to specific industries. Community colleges can then focus in on training that is feasible and applicable. Niche training or specialized higher level training may not result in the hiring of a tremendous amount of people but can be something that provides employees with higher salaries, in-house promotions, and job retention. Information should ultimately come from your local region, but community colleges should always keep up with labor market data to help make decisions on new and existing programs.

Trends show that employers and granting agencies are favorable to short term training that gets individuals back into the workplace faster; however, under traditional means, that same individual does not receive an education that ends with a college degree. Community colleges will have to look for ways to preserve the curriculum programs while providing for the demand. Certificate programs that can be finished in one semester matches the modular approach called for by the DOL. In fact, the college certificate completion rate in the US was up by 242% in the last two decades^[15]. Woods^[15] discussed that students were able to find gainful employment with a certificate, and did indeed, make a much higher wage than someone without any post-secondary education. The community college has a great challenge ahead, but no other institution can be as diverse in meeting local needs. No two service areas are the same, so community college administration and faculty have to be diligent in what direction they take that will best serve their region.

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