Workforce and Business Education for Sustainability at Community Colleges

Lead Author: Dr. Chris G. Beehner, Seminole State College of Florida

Abstract

One of the primary roles of community colleges is providing workforce and business training and education to address the employment needs of their respective communities. American employers are increasingly tasked with responding to societal demands for social responsibility and sustainability. Although many traditional colleges and universities prepare business leaders for development of sustainable business strategies, the implementation of those initiatives may be limited if entry-level employees and supervisors do not receive comparable education and training. The community college system serves an essential role in providing workforce and business education which can prepare employees for developing and implementing sustainability initiatives and programs. This chapter examines the role of the community college system in providing sustainability-focused workforce and business curriculum. In addition to describing the need for such curriculum, the challenges faced when providing sustainability education, and the risks of not providing this training will be examined. Examples of successful sustainability-focused workforce and business education programs will be described, followed by discussion about the future role and opportunities for community college level sustainability education.

Introduction

Community colleges in the United States educate approximately one-half of undergraduate students (AACC, 2012), and are the most common higher education option for lower income, minority, and first-generation college students. Since their inception in the late 1890s, community colleges have educated more than 100 million students, with 12.8 million students enrolled in 2012 (AACC, 2012). Unlike traditional university students, community college students attend college part-time, work more hours, provide support for families, and are usually older, with an average age of 29 (Kane & Rouse, 1999). While community colleges vary in enrollment size and mission, most share common characteristics of open admission, affordable tuition, and workforce-focused training.

While most community colleges provide an academic pathway to subsequent university enrollment, one of the primary roles of community colleges is providing technical and workforce training and education to address the employment needs of their respective communities. As a result, the community college system is better qualified to fulfill local community and workforce training needs than any other higher educational segment (Beehner, 2018). Community colleges have demonstrated considerable success in providing workforce training (Geller, 2001) through work-based, experiential, and applied learning curriculum which prepare students for entry-level technical careers (Sullivan, 2005). In addition to offering vocational and technical certificates, and associate degrees, an increasing number of community colleges are offering baccalaureate degrees in workforce-focused disciplines (Beehner, 2018).

Community College Role In Providing Sustainable Business And Workforce Training And Education

American employers are increasingly pressured to respond to societal demands for social responsibility and sustainability. However, for business sustainability initiatives to succeed, the programs developed by middle and senior management must be understood and implemented by entry-level employees (Beehner, 2018). Therefore, the community college system serves an essential role in providing sustainable business education to a population that is critical for advancement of sustainability within the business sector. Although many traditional colleges and universities prepare business leaders for development of sustainable business strategies, the implementation of those initiatives may be limited if entry-level employees and supervisors do not receive comparable education and training (Beehner, 2018). While traditional colleges and universities began implementing sustainability policies, procedures, and curriculum in the late 1980s (Vaughter, Wright, McKenzie, & Lidstone, 2013), community colleges have responded more slowly in implementing the same (Feldbaum, 2009).

Need For Business And Workforce Training In Sustainability

While an increasing number of businesses are implementing sustainability initiatives and programs, the success of sustainable business initiatives may be limited by insufficient sustainability competence among entry-level workers (Beehner, 2018). A gap likely exists between middle and senior management, and entry-level worker understanding of sustainability within a business or workforce context (Beehner, 2018). Therefore, sustainable business education in business schools should be complemented at the community college level, if entry-level workers and supervisors are to successfully implement and manage sustainability initiatives and programs (Beehner, 2018). However, existing training methods appear insufficient for meeting the challenges related to a transition to sustainability (Hatfield-Dodds, Turner, Schandl, & Doss, 2008).

Employers require and support training that provides future employees with the skills necessary to maintain organizational competitiveness (O'Banion, 1997). The community college system is recognized for providing the skills necessary for employees to achieve and maintain workforce competitiveness (Sullivan, 2005). Although some stakeholders question the applicability of topics such as sustainable business to the workforce focus of community colleges (Beehner, 2017), the demand for sustainable business education continues to increase. Moreover, the workforce education mission of community colleges offers an ideal platform for entry-level sustainability education, because no other higher educational sector addresses this need. However, the community college system is often ignored in sustainability education discussions (Potter, 2009), and there are long-term repercussions when higher education institutions do not meet the needs of the business community (Geller, 2001).

Soyka (2013) identified two significant reasons for offering sustainable business education to entry-level workers. First, although entry-level employees and supervisors may not participate in corporate strategy development, they are frequently expected to implement and measure sustainability policies and performance (Soyka, 2013). Second, these employees represent their employers in the local community, and may contribute practical sustainability solutions based upon their experiences and interactions with local social and environmental issues (Soyka, 2013). Therefore, it is essential for employees at all levels to understand and adopt sustainability.

Providing Effective Business And Workforce Sustainability Education

Students who have completed workforce or business programs of study at community colleges have often completed minimal environmental science coursework, and may therefore have limited knowledge of or interest in environmental sustainability (Beehner, 2018). Therefore, workforce and business sustainability training should be presented in a pragmatic, non-technical manner, demonstrating the business case for sustainability (Beehner, 2018). Because most community college students live and work in the local community, local businesses and industries should be used as case study topics to ensure relevance (Beehner, 2018). Sustainability should be explored both as a responsible business model, and as a method of waste reduction and efficiency improvement for profit maximization (Beehner, 2018).

Challenges To Effective Business And Workforce Sustainability Education

There are two challenges with offering sustainable business education in community colleges: the limited availability of entry-level sustainable business textbooks and supporting course content; and, stakeholder apprehensiveness about the relevance of sustainability to business (Beehner, 2018). During recent development of an entry-level sustainable business course, this author reported limited availability of appropriate undergraduate textbooks and course material (Beehner 2017). Stakeholders often question the relevance of a sustainable business curriculum because of the career-specific focus of community colleges. Moreover, employers in more conservative areas may be reluctant embrace business involvement in issues such as climate change, and environmental responsibility (Beehner, 2018).

Risk Of Not Providing Business And Workforce Sustainability Education

There are both external and internal risks for community colleges not providing business and workforce sustainability education. The external risk is that a workforce not educated about the necessity for, and the means of achieving sustainability will likely be less successful in that area. Communities that are not sustainable may experience increased effects from climate change, as well as be viewed by potential inhabitants as undesirable. The adverse effects of this perspective include reductions in population, business patronage, and local tax revenue. Moreover, businesses and organizations that are less sustainable may be less able to compete against more sustainable entities, resulting in reduced revenue, and subsequently reduced employment.

The internal risk of community colleges not providing sustainability education include reduced revenue, and potentially reduced relevance. When community colleges fail to offer appropriate workforce skills, other institutions willing fulfill the resulting skills gap (Geller, 2001). For example, the for-profit higher education sector has increasingly addressed academic needs that were inadequately provided by traditional colleges and universities (Ruch, 2001). Community colleges offer affordable education, often with limited sources of revenue. Therefore, it is essential that revenue is not lost due to unresponsiveness to workforce and community demands.

Examples

There are numerous examples of successful community college sustainability-focused workforce and business education programs, a few of which will be briefly described in this

section. An increasing number of community colleges are offering courses, college credit certificates, and associate degrees in sustainability-focused business and workforce disciplines. Several examples of workforce and business focused sustainability courses, certificates, and associate degrees is listed in Table 1. While not conclusive, this list provides a glimpse of the diversity of workforce and business education and training available in the community college system.

In addition to associate degrees, community colleges in several states are authorized to confer baccalaureate degrees. In 2009, the Florida state legislature renamed the Florida Community College System as the Florida College System, because multiple member institutions offered baccalaureate degrees. One member institution, St. Petersburg College, located near Tampa, is the only US community college to offer a sustainable business baccalaureate degree – a Bachelor of Applied Science (BAS) in sustainability management. Two Florida community colleges, Florida State College Jacksonville, and Seminole State College of Florida offer a baccalaureate course in Sustainable Business Strategies, and Cascadia College in Bothell, WA, offers an interdisciplinary BAS in Sustainable Practices. Seminole State College is introducing a sustainability management specialization in their baccalaureate business degree, and a post-baccalaureate certificate in Sustainability Management, beginning summer 2020.

Table 1: Examples of Community College Workforce and Business Sustainability Offerings

Institution	Description	Offering
Bristol Community College (MA)	Sustainability Studies	A.S.
Bunker Hill Community College (MA)	Energy & Sustainability Management	Certificate
Community College of Denver (CO)	Sustainable Design	Certificate
Dallas County Comm. Coll. District (TX)	Renewable/Sustainable Energy Tech	AAS & Cert
Holyoke Community College (MA)	Sustainability Studies	AS & Cert
Johnson Community College (KS)	Sustainable Agriculture	Certificate
Kapi'olani Community College (HI)	Sustainability	Certificate
Lorain County Community College (OH)	Sustainable Agriculture	AAS & Cert
Manchester Community College (CT)	Sustainable Energy	Certificate
Mesa Community College (AZ)	Sustainability	Certificate
Monroe Community College (NY)	Sustainability Studies	AS & Cert
North Seattle College (WA)	Sustainable & Conventional Energy & Control Technology	Certificate
Seminole State College of Florida	Sustainability	Certificate
Shoreline Community College (WA)	Sustainable Business Leadership	Certificate
SUNY Broome Community College (NY)	The Sustainable Business	Course

Case Study

Seminole State College of Florida began offering a college credit certificate in Sustainable Engineering in 2013. After receiving a National Science Foundation (NSF) Establishing a Means for Effective Renewable/Green Energy (EMERGE) grant in 2015, Seminole State faculty and staff modified the certificate to present a more interdisciplinary approach to sustainability. The program was designed to increase student employability, offer additional STEM courses and certifications, provide a high school dual-enrollment program, and increase interest in sustainability and STEM among students seeking non-science degrees. Faculty and staff

developed six new courses from multiple disciplines to supplement existing engineering course offerings, and added new certifications in the disciplines of engineering technology, renewable energy, construction, environmental science, and automotive technology.

While all four project objectives were achieved, several objective outcomes were significant. The objective of increasing the number of students enrolled in sustainable engineering courses exceeded expectations by increasing nearly ten-fold from 2014 to 2018. In addition, the number of School of Engineering, Design and Construction students pursuing the embedded Sustainable Engineering certificate increased 460% from 15 to 84 during this same period. While female and minority participation was not a stated objective, of the 251 students who enrolled in at least one of the certificate courses during the 2018-2019 year, 57.7% of those who identified gender were female, and 45.8% of respondents identified with a demographic group other than white. While the proportion of students who were female decreased 3.4% during this time, the number increased 43% (2014 = 33; 2018 = 145). However, both the percentage and number of students not identifying as white increased from 35.2% (n = 19) to 45.8% (n = 115).

Some of the students enrolled in the certificate program participated in project based learning, including building an ICF (Insulated Concrete Form) Safe Room using FEMA standards, working with industry professionals to design and build a Habitat for Humanity residence that achieved basic LEED certification from the USGBC, and designing and building a "tiny house". Students were also able to participate in study abroad service learning activities including a trip to Luquina Chico on Lake Titicaca, Peru. The students studying in Peru helped mitigate the global problem of 1.6 million people globally dying annually from open fire cooking and heating of homes by educating and working with the local population to adopt improved adobe stoves which better capture heat. Regardless of whether they participated in the project based learning or study abroad opportunities, students enrolled in the interdisciplinary certificate received workforce training which prepared them for sustainability employment locally, nationally, and globally.

Discussion

Community college participation in sustainable business and workforce education has both local and global significance and impact. The withdrawal of the United States from the Paris Climate Accord has motivated numerous local governments and businesses who have pledged to continue to support climate action to mitigate climate change. This localized effort will require local delivery of business and workforce sustainability education. Local government and business employees returning to college for technical, vocational, and undergraduate education are more likely to attend community colleges than universities. Because the demand for sustainability-focused education and training may increase significantly, it is imperative that community college faculty and administration fulfill this obligation. After all, an important aspect of community colleges is their presence in, and service to the community.

The global impact of community colleges is often underestimated. While most community college students live within one hour of a community college campus (AACC, 2012), and frequently remain within their community after graduation, many institutions accept and encourage international student enrollment. Community colleges offer an affordable alternative to international students desiring an American education at an affordable rate, especially when

those institutions offer baccalaureate degrees. Moreover, one of objectives of education for sustainable development (ESD) is to ensure that essential sustainability knowledge and skills are available to all public and private workers in all workforce sectors (UNESCO, 2012). Community colleges fulfill this ESD objective by offering workforce sustainability education to current and future workers who may apply that training locally, nationally, and globally.

Conclusion

Broad proliferation of sustainability-focused workforce and business education is essential for the United States to maintain a global competitive advantage. While the United States has frequently demonstrated leadership on the global stage, U.S. leadership within the area of sustainability has often lagged behind that of other developed nations. To sustainably meet the needs of current and future generations, sustainability leadership must be developed within all sectors and at all levels. The community college system offers an established platform for delivery of sustainability-focused workforce and business education to a broad audience. While dozens of community colleges are presently delivering this education, additional participation will be required to educate a sufficient segment of the workforce. The pathway has been prepared, and the time for action is now.

References

American Association of Community Colleges (AACC; 2012). About. Washington, DC: Author. http://www.aacc.nche.edu/AboutCC/Pages/default.aspx

Beehner, C.G. (2017, January). Teaching sustainability to a traditional business audience. In Conference Proceedings of the International Academy of Business and Public Administration Discipline, 14(1). Paper presented at IABPAD Conference: Orlando, FL (pp. 298-308).

Beehner, C.G. (2018). Expanding sustainable business education beyond business schools. In S. Dhiman and J. Marques (Eds.) Handbook of Engaged Sustainability. Heidelberg, Germany: Springer Nature. doi:10.1007/978-3-319-53121-2_51-1).

Feldbaum, M. (2009). Going green: The vital role of community colleges in building a sustainable future and green workforce. Washington, DC: Academy for Educational Development.

Geller, H.A. (2001). A brief history of community colleges and a personal view of some issues (Open admissions, occupational training and leadership). Washington, DC: US Department of Education. http://files.eric.ed.gov/fulltext/ED459881.pdf

Hatfield-Dodds, S., Turner, G., Schandl, H., & Doss, T. (2008). Growing the green collar economy: Skills and labour challenges in reducing our greenhouse emissions and national environmental footprint. Canberra, Australia: Report to the Dusseldorp Skills Forum.

O'Banion, T. (1997). Back to the future. In T. O'Banion (Ed.), A learning college for the 21st century (pp. 41-62). Phoenix, AZ: The Oryx Press.

Potter, G. (2009). Environmental education for the 21st century: Where do we go now? The Journal of Environmental Education, 41(1), 22-33. doi:10.1080/00958960903209975.

Ruch, R. (2001). Higher ed. inc.: The rise of the for-profit university. Baltimore, MD: Johns Hopkins University Press.

Soyka, P.A. (2013). Creating a sustainable organization: Approaches for enhancing corporate value through sustainability. Upper Saddle River, NJ: Pearson Education.

Sullivan, L. G. (2005). National profile of community colleges: Trends & statistics. Washington, DC: American Association of Community Colleges.

United Nations Educational, Scientific and Cultural Organization (UNESCO). (2012). Education for sustainable development sourcebook. Paris, France: UNESCO. Retrieved from: https://sustainabledevelopment.un.org/content/documents/926unesco9.pdf

Vaughter, P., Wright, T., McKenzie, M. & Lidstone, L. (2013). Greening the ivory tower: A review of educational research on sustainability in post-secondary education. Sustainability, 5, 2252-2271. doi:10.3390/su5052252.

National Council for
Science and the Environment

Thank you for reading this chapter of the NCSE Community College Handbook for Sustainability Education and Operations.

Does your institution do something different in this area?
Do you have a project, program, or innovation in practice in this area?
Please consider submitting a case study to NCSE.

NCSE will review your case study and an NCSE team member will reach out to you for additional information. The case study may be included in the NCSE Community College Handbook for Sustainability Education and Operations.