Addressing the Obligation Gap: Career and Technical Education in a Remote Learning Environment

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[Abstract] This article focuses on the current learning environment in Career and Technical Education programs often offered in Community Colleges and how these are impacted by the SARS-CoV-2 pandemic. It explores how historical challenges require community college involvement in educational equity by being committed to the obligation gap. Obligation gap by definition, "calls out the institution, not the student, to be the prime agent of change (Sims et al. 2020, p. 36). Historical references are provided to assist in understanding what needs to be considered in moving forward during the pandemic and develop new learning environments that will assist afterwards.

[Keyword] equity gap, community college, career and technical education, pandemic, self-efficacy

Current Learning Environment

The current learning environment has been forced to shift to support students learning in a pandemic that has not recently been experienced at a global level. Although the resources, knowledge, and opportunity are currently available to support student learning, uninformed decisions and opportunity gaps have only increased in an already challenging aspect in learning for those who have access to resources and those who do not. This challenge has been further exacerbated in Career and Technical Education (CTE) programs that serve students of color, first generation, and other individuals who are impacted by the lack of educational equity. Education equity for this article is defined as stated by Sims et al. (2020, p. 12),

> Educational equity is characterized by intentional work to create positive, nurturing educational spaces where all students are empowered, encouraged, and equipped to succeed academically precisely because they have been afforded rigorous and rich education opportunities that allow them work towards the realization of their full academic and human potential.

CTE programs often require students to work in various classroom and job-related spaces, such as face-to-face, virtual, and remotely to support the learning outcomes needed to achieve the required credentials to enter the workforce. Recently, CTE learning in such spaces have not had a positive impact as the face-to-face learning environment is limited with new procedures in response to the pandemic that requires social distancing and remote learning as well as additional resources to engage in the learning environment. For students already faced with limited resources, this new learning environment increases the equity gap, further disadvantaging students in their pursuit of academic success.

In order to stop the increase in the equity gap, educators and the institution must address the obligation gap. Obligation gap by definition "calls out the institution, not the student, to be the prime agent of change" (Sims et al. 2020, p. 36). Students in general are faced with the challenges to learn content and succeed in a non-traditional learning environment. This situation significantly

impacts CTE students who are in programs that require compliance with industry standard guidelines to complete hands-on and internships as part of obtaining the credential in an CTE program. In addition, the current environment also impacts students' concern about continuing in an industry that was significantly impacted by the pandemic; however, recent labor data support that CTE programs will continue to grow as there is a significant societal need for employees in career fields that are supported by CTE programs. The majority of CTE programs are offered in community colleges with open enrollment that provide opportunities for students to achieve their academic and career goals.

Demographics of Community College Students and the Obligation Gap

The demographics of the students who attend community colleges are diverse and inclusive. The student population is significantly more diverse compared to those of other higher education institutions as identified. Forty-one percent of undergraduate students attended community college in the Fall of 2019 according to an American Association of Community College reports (2022). Community colleges also have a significant number of students enrolled who are considered at risk, reported as 53% Hispanic, 43% Black, 56% Native American, 39% First Generation, and 73% Financial Aid recipients. Given these statistics, community colleges have the opportunity to lead the change in the equity gap. However, historically and currently, that continues to be a major challenge for community colleges.

Community colleges started out to support individuals to receive education after high school; however, a significant level of politics limited this goal, and this barrier continues to exist as community colleges lack the focus to identify and act on the obligation gap. As a result, the institutions have not fully met the challenge to support their diverse students. Community colleges continue to face the challenge of providing an inclusive learning environment that includes developing learning spaces and resources to support their students that include students in CTE programs that often have rigorous requirements including state, national, and industry accreditation requirements.

Historical Information of Community Colleges

Community colleges were created to provide access to higher education for all students; especially students who might not have other options. The number of community colleges has continued to grow in the United States since the start of the Joliet Junior College, which was the first community college established in 1901 (American Association of Community College, 2022; Illinois Community College Board, 2022). The Community College Act of 1965 delineates the long-term and continued support for community colleges. Several presidents of the United States have recently considered options to provide free community college education (The White House, Office of the Press Secretary, 2022). Although this has not come to pass, community colleges continue to successfully provide students the opportunity to achieve their academic and career goals.

The community college evolved from at least seven sources of educational innovation. Two began in the 1880s and 1890s, i.e., community boosterism and the rise of the research university. Three came from the educational reforms of the Progressive Era (1900–1916), i.e., the advent of universal secondary education, the professionalization of teacher education, and the vocational education movement. The final two, open access to higher education and the rise of adult and continuing education and community services, were primarily post–World War II developments

(American Association of Community Colleges, 2022; Illinois Community College Board, 2022; Levinson, 2005). The origins of these innovations can still be seen in the current community colleges.

Career and Technical Education (CTE) Programs

Career and Technology Education (CTE) programs are academic programs which provide student credentials to have a career in specific industries prior to receiving a bachelor's degree and possibly an associate degree. CTE Programs have existed early in the United States learning environment and have adjusted as needed throughout its history.

The Awakening (1776-1826) - The right to a free public education for children was stressed early in the United States as there was a need to educate future leaders. Apprenticeships were giving way to formal schooling in certain trades.

Independent Action (1826-1876) - In the early 19th century, the workforce and the public education system started to work together to create a continuous stream of workers for different jobs. Schools specializing in training students to enter a certain area of the workforce started to open their doors, creating the basic framework for career and technical education.

The Vocational Education Age Emerges (1876-1926) - The first manual training school, established in St. Louis, Missouri, in 1879, set the foundation for modern career and technical education. The school combined hands-on learning with classroom learning. Bills passed to support career and technical education are explored.

Coming of Age (1926-1976) - The first mass acceptance of career and technical education came after World War I and the movement spread in the years that followed. Career and technical education expanded to include adult education and retraining citizens to re-enter the workforce. World War II caused a surge in career and technical education as technical skills were needed for defense purposes. (Association for Career and Technical Education)

Currently, CTE prepares secondary, postsecondary, and adult students with technical, academic and employability skills for success in the workplace and in furthering their education (Association for Career and Technical Education, 2022). Health Science, Information Technology, Manufacturing, Hospitality, Agriculture, Human Services, and Construction are several of the major areas that are part of CTE programs (Association for Career and Technical Education, 2022).

Students who participate in CTE programs in community colleges often seek an opportunity that includes creating a solid foundation to achieve their lifelong goals. These students are often in the at-risk category of demographics in higher education and primarily include students of color and first generation. The students in this demographic are also significantly more often faced with daily challenges such as limited resources and less flexibility in schedule to attend classes in person. However, the same students are usually resilient in taking on the challenges to overcome multiple options to achieve a better living and seek out options to further their education and career goals.

Instructional Technology

Instructional technology has become essential in teaching and learning as it provides opportunities that are not offered in the same ways as in face-to-face learning environments. Instructional technology includes the use of software and hardware to support learning. Instructional technology provides for flexibility in delivery of content that might not be possible in a face-to-face environment. The integration of instructional technology in education has existed

for a long period of time and has demonstrated significant success in student learning (Anglin, 2011; Damarin, 1998).

Instructional technology started in the 1920's when visual media was used along with other technological tools to support the learning environment. In the 1930's and 1940's, the addition of audio was included with visual instruction as industrial training increased and the need for rapid military training as part of WWII. In 1950's B.F. Skinner initiated the focus on programmed instruction that further solidified the use of technology in learning. From that time to the current, there has been a rapid adaptation and integration of instructional technology in the learning environment to support student's academic success (Association for Educational Communications and Technology)

Historically, instructional technology has not been inclusive of diversity. Although the research has identified a direct connection between access to instructional technology and students' academic success, studies have also identified a cultural bias based on the inclusiveness gap between the developers and the users (Chen, 2007; Chisholm, 1995). Research has identified and continues to identify that technology exists in a culture that often does not include people of color and working-class individuals who are usually first-generation students and women (Chen, 2007; Chisholm, 1995). Research continues to identify this lack of inclusiveness as a disadvantage to these at-risk students.

Historical and current research shows a direct connection between access to instructional technology and students' academic success (Bollash, 2013; Collins & Halverson, 2009; Hyland & Kranzow, 2011). Research identifies the effective use of instructional technology to provide students the opportunity to experience additional learning outside of the classroom. These strategies include access to real life experiences that might not be possible in a traditional classroom, support software to reinforce the content that is provided in the classroom, and flexibility to access content provided during and beyond the scheduled class time.

The use of instructional technology is limited in CTE programs. There has been some development in instructional technology and hardware that include simulation software; however, it is not at a level to support the needs of the students in CTE programs. Two of the major challenges related to instructional technology is limited access to the software and hardware to support students in CTE programs and the exclusion of the culture of students who are considered at risk in the instructional technology.

Historical Challenges for Students Who Are Considered at Risk

Throughout the history of the United States with its racist structures and behavior, students who are considered at risk have been faced with challenges in the traditional learning environment, such as minoritizing them as intellectually inferior to those of privileged European descent. These challenges also include community college students' experience (Pickett, 1998). Some would argue that all children are at risk in some way or another, while others emphasize that some children face much higher risks than do other children. For example, children are seen as at risk if they are disabled, have low self-esteem, or have been abused.

Alternatively, research supports that the community and institution should not view children as being at risk but create environments to support students' academic success (Baldwins et al., 2011; Bollash, 2013). Anderson Moore (2006) states, "It is critical to note that *at risk* is a concept that reflects a chance or a probability…It is valuable for programs to understand the levels of risk

and protective factors in their program clients, as well as of their potential clients. Such understanding can help in developing programs and also in obtaining funding for them."

Perspectives to Consider Changing in Equity Gap

Introduction - Perspectives

There are multiple challenges when trying to address the equity gap related to students' success in their academic career. It is important for leadership of education institutions to take on the challenge to address the equity gap by being intentional in committing to the obligation gap. This requires a shift in how the role of education educational institutions is currently defined. Individuals in educational institutions must focus on being student-centered, which will include taking operational steps. As suggested by Sims, et al. (2020), that includes acts of genuine care, a call to civic consciousness, and brave leadership.

One approach for professionals in educational institutions is to act with genuine care by identifying and strengthening students' attributes related to self-efficacy. Such key attributes are often found in students who have a successful academic career and these can be supported and further developed. Reorganizing educational institutions to implement student-centered methods leads to empowerment of students. This requires brave leadership in increasing civic consciousness when developing transformative educators and culturally sensitive institutions (Sims, et al., 2020).

Some of the attributes that provide support for students are grounded in social cognitive theory. Bandura's (1986) insight provides a perspective on how we might consider these attributes. Bandura and other researchers (Bandura, Martinez-Pons & Zimmerman, 1992) intentionally consider how different individuals might be successful in the same environment. They advocate addressing individual student needs to support successful outcomes for each one. The important aspects in determining the different needs of individuals in the same learning environment is self-efficacy. Three specific areas that focus on self-efficacy are self-directed learning, career aspiration, and computer self-efficacy.

Self-Directed Learning

Self-directed learning is defined as an individual level of independence to achieve short- term and long-term goals. Students who have a higher level of being self-directed often succeed in their academic career. Malcolm Knowles (1975) was instrumental in the development and understanding this concept that focuses on individuals to evaluate their learning needs and develop self-directed inquiry that involves the teachers understanding their role in supporting individual student's academic goals and learning styles and preferences. One of the most often identified models that expanded on Knowles' concept is self-directed learning created by Grow (1991/1996, 2022). Dr. Grow created a model that clearly identified the role of the student and teacher with the understanding that it was not an overall assessment, but an approach to assess students' needs at different levels that could vary based on the different goals the students were seeking to achieve.

Levels of self-directed learning (Grow, 1991)

Stage	Student	Teacher
Stage 1	Dependent	"The Expert'
Stage 2	Interested	Motivator
Stage 3	Involved	Facilitator
Stage 4	Self-directed	Delegator

Stage one identifies the need for students to have a teacher be more intentional in sharing information in more detail because the students have an extensive gap in the topic to succeed. Stage 2 and Stage 3 identify a space in which a student has a basic understanding of the topic but has not become an expert in assessing the gaps and seeking solutions. In these stages, it is important that the teacher is not micromanaging the student to provide motivation and facilitate the learning experience to further empower the student. Stage 4 identifies the need to provide support even when students understand how to navigate the learning experience; however, it identifies the need for the teacher to continue to support the student as needed to be successful in an academic career. In this stage, the teacher is truly empowering the student to advance and succeed in their long-term and short-term goals while reinforcing the student's confidence to continue to be successful. Other research has also identified the success of self-directed learning as a significant indicator for students' academic success and achievement of other goals (Cox, 2002; Gibbons, 2002; Guglielmino, 1978; Guglielmino & Guglielmino, 1991; Guglielmino & Guglielmino, 2003; Guglielmino & Guglielmino, 2003).

Career Aspiration

Career Aspiration is defined as the motivation for an individual to achieve career goals. Students who have a higher level of career aspiration often achieve their career goals. A tool that has been successful in assessing students' Career Aspiration is the *Career Aspiration Scale* (CAS) developed by O'Brien (1996, 1997). The tool is used for self-reflection by individuals in the areas of career goals, leadership skills, motivation to advance in career goals, and seeking out professional development (O'Brian et al., 1997).

CAS uses a Likert type scale representing the participants' self-reflection on their agreement with the ten statements affiliated with career aspiration. The lowest point is zero that identifies the statement is not all true as it relates to the participant and the highest point is 4 that identifies the statement is very true of the participant. Other research has identified that students with a higher level of career aspiration aligns with student's efficacy to achieve career goals (Bikkos et al., 1997; Tovar-Murray et al., 2012).

Computer Self-Efficacy

Computer self-efficacy is defined as an individual's level of comfort in using technology to complete tasks. Students who have a higher level of computer self-efficacy successfully utilize technology to achieve short-term goals. Murphy's scale assesses students' comfort in using technology (Coover, Murphy, & Owens, 1989). The scale is based on participant's self-assessment in answering 35 questions on a Likert type scale based on the level of truth that the questions align

with the participant. Research supports the higher level a student's computer self-efficacy, the more effective they are in using technology to support their academic success (Peirce, 2002).

Summary - Perspectives

Using multiple lenses of self-efficacy forces a better understanding of being student-centered and addresses the needs of students from multiple aspects. In addition, the use of multiple lenses can also assist in identifying if specific demographics emerge in the various aspects of self-efficacy. This information can assist in focusing on the students in those demographics and understanding how to challenge the current institution structure to address these needs. It can provide leadership with insights of how structures and approaches can repeatedly create inequality for a specific demographic of students. Research has proven success when taking this multiple lens approach (Baldwin, 2011; Duerr, 2014; Dassance, 2011). It is important to note that what is presented in this article are only suggestions for developing an operation plan to start the process to address the obligation gap. The lenses presented are not to be seen as a means to a short-term solution that requires a long-term effort to address the historical constructs that currently exist.

Conclusion

Moving Forward: Community College Role in Supporting CTE Students

As the equity gap continues to widen during the pandemic, it is even more important in our current learning environment for community colleges to be intentional to focus on the obligation gap. This focus is even more critical for Career and Technical Education (CTE) programs as students seek opportunities to achieve their academic and career goals; especially students who are considered at risk. It is important for community colleges to be intentional in supporting students who are considered at risk. As stated by Taylor-Mendoza (2020), "Minding the obligation gap, on the other hand, puts the responsibility on the educational institutions to be student-centered when designing academic experiences for the communities they serve." (p. 36)

The best approach for educational institutions to operationalize the process is following the suggestion by Sims et al (2020) that includes the following operational steps: 1) Acts of genuine care, 2) A call to civic consciousness, 3) Brave leadership that inspires and produces transformative educators.

These steps identify a critical aspect of education that remains an issue: being genuinely caring and brave leaders to make conscientious decisions in making the learning space transformative to further increase academic success gaps, moving away from the historically crippling environments and actions of education institutions and professionals. Oftentimes, such change can seem abstract and daunting without the understanding of where to start. This overwhelming feeling can often lead to making decisions that are not student-centered but led by a political or myopic approach.

An approach to offset this error in operationalizing a plan is to look at it from a self-efficacy approach that considers the student's experience and reflection. This approach would intentionally consider how different individuals might be successful in the educational institution and hold the institution and its leaders accountable in addressing the various needs and support successful academic outcomes for each individual. Self-directedness, computer self-efficacy, and career aspirations are three aspects in developing self-efficacy that have clearly been identified as contributing to successful students' academic achievement. These same aspects have become prominent and critical in the new learning environment during the pandemic. These aspects of the

equity gap identified by the tools are being significantly impacted during the current pandemic and can be useful in approaching a solution to our new learning environment in CTE and other educational programs.

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