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Role of community colleges and other TVET institutions in advancing sustainable development by supporting access, diversity, and inclusion for nontraditional student populations

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ABSTRACT

The Sustainable Development Goals link access to higher education, particularly for non-traditional populations, as a way to fight poverty and ensure prosperity. This article examines the experiences of several under-researched categories of non-traditional students who attend Community Colleges and Technical Vocational Education and Training (TVET) Colleges in multiple jurisdictions worldwide. The article begins to fill in the gap with comparative data on how these institutions advance equity, diversity, and inclusion through access to higher education. The implications of Community Colleges and TVET are analyzed using the lens of Neo-Liberalism and the Capabilities Narrative. The study extends the scope of the inquiry into the contributions these institutions make to sustainable development. The article uses a comparative multi-case study approach to examine the Community Colleges and TVET Colleges in different jurisdictions worldwide.

Introduction

At a time of increasing political, economic, environmental, and humanitarian instability, the roles higher education institutions play in supporting sustainable development are paramount. The Sustainable Development Goals (SDGs; United Nations, 2015) are a common international framework to fight poverty, protect the planet, and ensure prosperity (IBID). Research shows that access to postsecondary education, particularly for non-traditional populations, is a viable strategy to fight poverty or gain higher economic status, thus building prosperity through education (Moodie et al., 2019; Raby & Valeau, 2018; Wheelahan, 2016).

SDGs acknowledge the importance of Technical Vocational Education and Training (TVET; United Nations, 2015), and governmental NGO and national associations see the Community College (CC) and TVET sectors (aka Sector) as essential contributors to advancing access to higher education for non-traditional students Legusov et al. (2021). Nonetheless, the university sector dominates the discourse on access to tertiary education and largely ignores the CC/TVET Sector (Legusov et al., 2021).

Studies on non-traditional CC/TVET students (Legusov et al., 2021; On-Ting & Tiffany, 2021) mainly focus on specific issues that students encounter or on a particular group of students, such as indigenous, international, visible minority, or refugees. Furthermore, most studies on this Sector focus on Western institutions (Raby & Valeau, 2018). While such studies contribute to the literature on the topic, their findings may not generalize easily to institutions in countries with drastically different socioeconomic, cultural, and political environments. Few studies examine non-traditional students in this Sector comparatively. This study examines the experiences of several under-researched categories of non-traditional CC/TVET sector students in multiple jurisdictions around the world. The article provides comparative data on how the Sector advances equity, diversity, and inclusion for all. Comparative data are important as they a) contribute to the conceptualization of the non-traditional and underserved students; and b) compare how institutions in vastly different socio-economic and cultural environments view such students and support them. In sum, the study widens the scope of the inquiry into the contributions that the CC/TVET sector makes to sustainable development. Three broad research questions guide the study:

What are the experiences of different groups of non-traditional CC and TVET students?

How do institutional policies and practices support the success of such students in terms of equity, diversity, and inclusion?

How does the Sector become a tool to build a justice-oriented and socially conscious society and meet some of the SDGs?

Literature review

This section is organized according to the study's main themes: non-traditional student profiles, institutional policies and practices, and the Sector's role in meeting SDGs. We choose the literature to represent the various themes and to include examples from community colleges, TVET institutions, and global counterparts (Sector) worldwide.

Non-traditional student profiles

Many designations exist for non-traditional students in the United States (Ross-Gordon, 2011) and in Canada (Tamtik & Guenter, 2019), including part-time, differently-abled, first-generation, indigenous, low-income, older, second-career, single parent, and other (dis)empowered and marginalized groups. These populations are highly represented in Sector institutions globally. Thus, similar non-traditional descriptors are found in the majority of students in TVETs in Chile (Ovalle-Ramirez, 2019), Colombia (Mendoza et al., 2016), India (Gross, 2017), and the United Kingdom (Gallacher & Reeve, 2019). A deficit narrative assumes low expectations for non-traditional students. Yet, lack of their success often results from institutional stratification across racial, class, gender, and age distinctions, as well as racism, discrimination, and marginalization by inequalities in a curriculum and a hostile campus environment (Raby, 2019). Counter-deficit narratives show non-traditional students possess numerous social and cultural forms of capital, some of which are unique to racial, ethnic, and gendered groups. Some non-traditional college students use a high level of motivation and resilience to succeed. Thus, as On-Ting and Tiffany (2021) found in Hong Kong, low socioeconomic students adjust well to community colleges because they see their education as a second chance to gain entrance to the university.

Adult students

Adult students are commonly defined as those 23 and older (Ross-Gordon, 2011). The average age of TVET students in Iceland, Ireland, New Zealand, Poland, Sweden, and Switzerland is 35 (Dawborn-Gundlach & Margetts, 2018). Adults are 89% of students in community colleges in Ontario (Collis & Reed, 2016) and 59% in the United States (AACC. American Association of Community Colleges,

2022). Adult students may find CC/TVET education attractive because of low tuition fees, convenient locations, and flexible schedule options.

Working students

Even though working students have a limited amount of time, they often show a high level of dedication to their college studies. Wladis and Mesa (2022) point out that the time that working students dedicate to education can be seen as a valuable asset or capital, which they can later use to enhance their careers. Gipson et al. (2017) found that to achieve their goals, working students must balance competing demands such as family, friends, school, and a desire to be role models to siblings, children, and grandchildren.

Racial, ethnic, indigenous, female students, and other non-traditional designations

Colleges and TVETs worldwide serve students from rural and poor urban communities with large racial, ethnic, and indigenous populations. For example, the study conducted by Brown (2018) revealed that 70% of indigenous and 30% of non-English speaking students attend technical and further education (TAFE) colleges in Australia. Israel Academic Regional Colleges students are 32% Eastern Jews and 8.7% Arabs (Davidovitch et al., 2018). Kenya has four TVET institutions exclusively for blind and deaf students (Ministry of Education, Kenya, 2018). Examples of institutions that serve students in rural areas include Cursos Técnicos Superiores Profissionais in Portugal (European Commission, 2019) and Bangladesh Polytechnics (Rahman et al., 2019).

Institutional policies and practices

CCs and TVETs provide various services to improve equity, diversity, and inclusion on campus. Non-traditional students have all the stressors that their more traditional counterparts do, as well as stressors related to their particular circumstances. Some Sector institutions provide support that builds on students' capabilities to enable them to achieve equitable levels of success (McGrath et al., 2020). However, not all, Sector institutions provide equitable services to all their non-traditional students (Legusov et al., 2021).

Institutional programs

A wide range of various support programs in Sector institutions offer designated assistance for adult students in Canada (Dawborn-Gundlach & Margetts, 2018), international students in Canada (Legusov et al., 2021), and other non-traditional students in Hong Kong (On-Ting & Tiffany, 2021). As McGrath et al., (2020) point out, institutional programs seek to enable the critical capabilities of learners an ability to identify the many decision points in their academic studies.

Sector's role in meeting SDGS

The CC/TVET Sector addresses global challenges of access, poverty, and inequality in three ways. The open-access policy in institutions around the world makes postsecondary education available to many students (R. L. Raby & Valeau, 2009). The pathway/transfer programs, found globally, facilitate access to universities upon completion of their college studies (Skolnik, 2020). Finally, providing relevant education and training to college students helps to reduce poverty and inequality, increase the socio-economic development of local communities, and contribute to social mobility (Wheelahan, 2016).

Literature is showing that the rapidly changing world accelerated by COVID-19 is profoundly affecting how people live and work (Ghosh & DeMartin, 2022). Some jobs will become obsolete, and new ones will be created. Education and upskilling offered in the CC/TVET sector are critical in

preparing students for the world that emerges post-pandemic (Raby & Valeau, 2022). A central tenet of CC/TVET policy is the belief that education contributes to social mobility and enables non-traditional populations to gain social and economic advancements (McGrath et al., 2020). Furthermore, McGrath et al. (2020) claimed that the CC/TVET Sector is an effective tool for creating a justice-oriented and socially conscious society.

Theoretical construct

The implications of the CC/TVET sector are analyzed using the lens of the Neo-Liberalism and Capabilities Narrative.

Neo-Liberalism narrative

The Neo-Liberalism Narrative frames education in the context of skills needed for employability to support the global economy. In this context, the Sector's purpose is to teach basic skills (Bonvin, 2018), governed by the worldwide market economy (Skolnik, 2020). The Neo-Liberalism Narrative stipulates that quality education leads to employment in quality jobs, that in turn, provide higher income and help the individual achieve social mobility, which benefits society (Slaughter & Rhoades, 2004). In this way, equity and the SDGs are served (McGrath et al., 2020).

Capabilities narrative

The Capabilities Narrative (Nussbaum, 2000; Sen, 1999) frames education in human welfare contexts in which learners have the agency to choose pathways and achieve outcomes that they value. The Capabilities Narrative critiques neo-liberalism, which is seen as a perpetrator of colonialism, persistent poverty, institutional racism, and skills training that limits equitable work and social mobility (McGrath et al., 2020). Philosophically, the Capabilities Narrative links education to obtaining productive lives, building strong communities, and supporting social justice outcomes (Moodie et al., 2019).

Even though these two narratives represent two diametrically opposite philosophies, they both play concurrent and important roles in the CC/TVET Sector's policies and practices. Thus, they provide a robust construct in which the study is situated.

Methodology

This article uses a comparative multi-case study approach to examine the CC/TVET sector worldwide. Comparative methodology studies interactions between trends and responses at global, local, and regional levels. It does this by "providing generalizable propositions and useful insights into the forces shaping the origins, workings, and outcomes of education systems (Arnove et al., 2020, p. 7) and seeks to understand how similar social issues are addressed in different political, economic, and social environments (Phillips & Schweisfurth, 2006). Such an approach can measure the quality and efficiency of educational systems (Nóvoa & Tali, 2003) and can generate new ideas, counter stereotypes, and lead to improvements in practice (Bray et al., 2007). Even though differences exist among various CCs and TVETs, fundamental similarities permit valid comparisons (Raby & Valeau, 2018). We use the comparative multiple-case study method (Bartlett & Vavrus, 2016) to focus on a particular phenomenon in a given period (Creswell & Poth, 2018).

Selection of case studies

The selection of the case studies is purposeful to include a variety of institutions, locations, and categories of non-traditional students. Table 1 details the selected five intuitions.

Table 1. Comparative Multi-Case Study Profiles.

Institutions	Location	Urban	Rural	Type of non-traditional students
CAAT	Ontario	√		International
TVET	Taiwan	√		Low SES
CEGEP	Quebec	√		Adult
CC	United States		√	Career Technical/Rural
TVET	Ghana		√	Women

Table 2. Individual Case Study Research Focus.

Institutions	Type of Research	Methods	Research Focus
CAAT Ontario	Qualitative	Interviews	International students as skilled immigrants
TVET Taiwan	Qualitative	Interviews	Social Justice
CEGEP Quebec	Mixed Methods	Database statistics Interviews	Continuing Education section of CEGEP
CC United States	Mixed Methods	Database statistics, Survey, Interviews	Global learning experiences
TVET Ghana	Mixed Methods	Interviews; Focus Groups	Women inequality

Data analysis

Each case study is based on an independent research project whose research methods are seen in [Table 2](#). The article itself uses the Bartlett and Vavrus (2016) vertical case study methodology to “trace a transversal process or set of relations” (p. 131) across each case study’s contextual units. The parameters for comparison are a) institutional type, b) non-traditional students, c) institutional policies toward non-traditional students, and d) examples of equity, diversity, and inclusion. Each case study was analyzed to identify emerging codes (Yin, 2016), and then codes were compared vertically to identify emergent themes (Bartlett & Vavrus, 2016).

Trustworthiness

The trustworthiness of qualitative research includes multiple components. We examined the data individually and then compared it to build a shared consensus on coding to ensure rigor. Credibility as the “truth” of the funding comes from the research methods employed in each case study. Transferability is met by finding commonalities between and among the multiple case studies. Dependability is consistent with findings that are consistent and repeatable.

Positionality

Our positionality as CC/TVET scholars provided us with an insider’s view of the institutional culture of the CC/TVET Sector and heightened awareness of the key tenets embedded in the mission and vision. We used reflexivity to ensure that our claims were linked to the evidence presented in the text (Yin, 2016).

Limitations

Our study has three limitations. First, while the findings are generalizable, the case studies are grounded in particular time and space. Second, within each country are multiple forms of CC/TVETs, and thus institutions in this study may not speak for the entire country. Third, purposeful selection may preclude other and more unique cases.

Case study of an Ontario colleges of applied arts and technology

Introduction

Governments in many developed countries are determined to attract more international students, hoping that many will remain after graduation as skilled immigrants. Ontario Colleges of Applied Arts and Technology (CAATs) provides a wide range of vocational certificate, diploma, and applied-degree programs that give international students an expeditious way to immigrate. CAATs have a longstanding commitment to open access and equal educational opportunities, but this does not automatically translate into desirable outcomes for all. Visible-minority, female, racialized, differently-abled, and other disadvantaged students often experience more precarious employment and higher poverty rates than their mainstream counterparts (Michalski et al., 2017). In response to these inequities, community colleges across Canada are implementing comprehensive equity, diversity, and inclusion (EDI) policies to ameliorate the prevailing institutional cultures and help marginalized and underrepresented groups succeed (Tamtik & Guenter, 2019). A missing element is that the CAATs EDI policies do not acknowledge the specific circumstances of international students whose intersectionality makes their experiences complex (Crenshaw, 1991). This case study explores how international students at a CAAT in Toronto, Ontario perceives the concepts of equity, diversity, and inclusion. Three research questions guide the study:

1. What experiences related to equity, diversity, and inclusion did such international students have while pursuing a college education?
2. How do they explain and make sense of their experiences?
3. To what extent did the college's structure, policies, and practices contribute to its success?

Methodology

Participants were 35 international college students (19 women and 16 men) ranging in age from 19 to 35 at an urban CAAT. Students reflected on their college experience during semi-structured interviews. Responses were examined through the lens of critical theory, which served as the theoretical foundation for this study.

Findings

Equity

Many participants said they were not aware of various college resources available to them, such as mentoring and tutoring services. Some found that college employees had a poor grasp of immigration laws and regulations governing international students, which restricted their ability to work. All pointed out that as international students, they pay much higher tuition fees than their domestic peers but are ineligible for tuition-assistance bursaries. Some said they were obliged to anglicize their names to improve their chances of employment.

Diversity

Diversity is often discussed in terms of what makes people different. However, this study explores diversity in understanding, accepting, and valuing differences (Ideal., 2021). Many participants shared that international students tend to gravitate toward their ethnic groups. Thus, the interaction between the different groups is limited. Many complained that, in some programs, the overwhelming majority of the students were from the same culture.

Inclusion

Several participants said their instructors favored domestic students, causing them to be less engaged in classroom discussions and other activities. They also had difficulty engaging with their instructors on a personal level. As one commented, "Some teachers don't even try to learn international students'

names.” Several said they were not taken seriously by their peers on campus because of their accent and appearance. Many felt they were often victims of stereotyping, citing comments such as, “You must be good at math” or “It’s easy for you; all you people do is work.” As a result, they tended to gravitate to the safe space of their own ethnic and racial groups.

Analysis and conclusion

The case study shows that international college students face numerous challenges related to race, ethnicity, and income that their domestic peers do not face. Important to equity is that the students interviewed were reluctant to address such challenges because of their precarious immigration status. CAATs were created with an open access mission, and yet their structures, policies, and services do not adequately support international students; thus, their experiences are not always satisfactory. This case study demonstrates that, in developing EDI policies, community colleges need to reevaluate student support services, which are heavily geared to domestic students. It also illustrates the urgent need to reexamine Canadian immigration policy concerning international students, given that current regulation makes it difficult for many international students to succeed.

Case study of Quebec general and vocational colleges’ role in social integration of adult students

Introduction

In the Canadian French-speaking province of Quebec, technical public postsecondary education is provided by general and vocational colleges (referred to as CEGEPs, their French acronym). CEGEPs offer three-year technical training leading to a diploma of college studies (DCS). They also offer two-year pre-university programs and continuing education explicitly designed for adults. Twenty-five percent of all CEGEP technical education enrollments are continuing education adult students, i.e., those who have a postsecondary degree or diploma or who reached the age of majority and have interrupted their studies for at least two terms. Despite their numbers, adult students are a marginalized category (Legusov et al., 2021). Studies show the precarious status of adults returning to training is central to understanding their successful pathway (Barkoglou & Gravani, 2022). Adult students often enroll in CEGEPs’ continuing education programs to update their qualifications and skills to return to the labor market (Markowitsch & Hefler, 2019). These programs, however, do not always consider various adult learner characteristics (Doray & Simoneau, 2019). For example, West (2022) claimed the goal for adult migrants is to gain inclusion and recognition in the society. This case study examines the CEGEP Continuing Education sector that targets adult students. Three research questions guide the study:

- 1) What are the characteristics of adult students?
- 2) What are institutional constraints to equity?
- 3) How is equity achieved for these students?

Methodology

The mix-methods data come from qualitative document analysis and interviews with students and the quantitative use of an institutional statistical database.

Findings

This study identifies several significant challenges that adult students face and institutional responses to equity, diversity, and inclusion in targeted programs for this population.

Diversity

Adult students face numerous inequities. Geographic disparities influence the composition of services and the profile of enrolled students. More than 60% of adult students are found in the large, cosmopolitan metropolitan area, and most are migrants. In this case study, 64.4% were born outside the province, 31.6% did not have French as their first language, and 60.3% did not graduate from a Quebec high school. The characteristics of adult CEGEP continuing education students are different from traditional students as they have more experience, come from diverse cultures, and have heterogeneous educational backgrounds.

Equity

Even though CEGEP continuing education is dedicated to the needs of adult students, institutional barriers in the political framework and regulations of the programs do not always meet those needs. This study concurs that skill-based programs are funded and structured around full-time attendance, which does not enable enrollment in individual courses (Bélanger & Robitaille, 2008). This is an obstacle for adults with jobs, family constraints, or for those who want to go back to school at a pace adapted to their situation. Unequal funding is given for part-time studies, which led to a loss of 80% of adults between 1992 and 2005. Since 2005, mainly limited budget in ACS programs has stabilized enrollment.

Inclusion

The study found that inclusion for CEGEP adult students is constrained by the study regime, which is intensive and differs from the types of education they previously had. The programs offered have a continuous academic calendar, with no breaks between sessions to achieve rapid graduation. The continuous academic calendar is a key concern as testimonies from students claim that the intensive program with back-to-back classes makes it more difficult for them to return to school.

Analysis and conclusion

The accessibility of CEGEPs, virtually free of charge and widely distributed geographically (Thériault, 2018), allows many adult learners to take requalification programs to regain an active social role. This training is in high demand with the aims to return to the labor market quickly. Through this pathway, CEGEPs help reduce adult marginalization. CEGEPs also help build social consciousness through networks based on intercultural relationships in this case study. Other research supports similar observations (Barkoglou & Gravani, 2022). By giving adults a sense of competence, self-esteem, and a place in society, the success of the academic pathway enables social reintegration (Fleming, 2016).

Case study of Taiwan's TVET: supporting students from disadvantaged backgrounds

Introduction

The key role of Taiwan's TVET sector is to cultivate competent workers for the labor market (International Affairs Office, 2016). The Sector attaches much importance to links between academic research and industrial needs (Wu & Liu, 2014). However, as Wu (2012) illustrated, Taiwan's TVETs also pay close attention to whole-person education. The country's education system consists of two parallel streams, general and vocational (International Affairs Office, 2016), with TVET education existing at high school, undergraduate, master's, and doctoral levels. Such an approach allows students in TVET tracks to switch to the general education track. This case study is part of a large, multi-national research project supported by Education International (Moodie et al., 2019). Using the capabilities approach (Nussbaum, 2000; Sen, 1999) as a theoretical framework, this research examined the role of Taiwan's TVET institutions in helping disadvantaged students acquire knowledge and skills

for a productive and fulfilling life. The research question guiding this study is how Taiwan's TVET sector promotes principles of equity, diversity, and inclusion to support disadvantaged students.

Methods

The study of a Taiwan TVET uses a mixed-method approach that includes qualitative methodology for document analysis, semi-structured interviews with TVET teachers and policymakers, and quantitative methodology for an online survey of students, alumni, and faculty members.

Findings

The findings show that Taiwan's TVET institutions do help disadvantaged students in acquiring knowledge and skills for a productive and fulfilling life

Equity and diversity

In Taiwan, disadvantaged groups consist primarily of lower socioeconomic students. Such students often have lower academic achievement in their early years due to a lack of family support and resources. Many are enrolled in the TVET stream in high school and continue in college. One faculty participant explained that their institution worked hard to accommodate students from disadvantaged families, many of whom take night classes, because they need to work to support themselves and their families. This faculty provides an example of a student from a single-parent family in poverty, stating, "the school offered him a free lunch box and educational resources such as a computer from the lab. Also, with some scholarship and stipend, he could have an opportunity to learn some skills and move to professional work, which is a shift-turn in his life." The access to education thus presents opportunities for students to change their jobs and their lives.

Inclusion

Taiwanese TVET college education is tuition-free, which is beneficial to lower socioeconomic students. Also, because of Taiwanese education's two-stream nature, students from disadvantaged backgrounds who might be guided to TVET because of poor academic performance, may move into an academic stream at any point. Several interviewees emphasized the benefits of such approach, which allows students to obtain professional and academic credentials. As Zhao (2021) pointed out, some TVET graduates obtained offers from Ivy League universities in the United States to pursue master's and doctoral research studies. Another example of inclusion is the flexible class schedule in the continuing studies department, offering shifts of day class and night class that enable adult students from lower socioeconomic backgrounds who need to work during the daytime to pursue college study and technical training to advance their career/life.

Analysis and conclusion

Despite many positive aspects, some challenges exist. Such challenges include social bias, lack of adequate funding, and loss of distinctive features by upgrading into universities. Taiwan's education and social values are influenced by the Confucian tradition (Marginson, 2013) in which scholarly work is valued higher than other professions (Fwu & Wang, 2002). Thus, parents expect their children to enter comprehensive universities rather than TVET institutions, regarded as a second choice. Second, funding for research in TVET universities is much less than in comprehensive universities. Third, TVET colleges are upgrading into universities, eroding their strong professional preparation and skill-training features. In conclusion, it is the special design and policy support of TVET in Taiwan that helps to advance sustainable development by offering students training for professional work and opportunities for higher education, although TVET still needs to overcome the current challenges from various aspects of the society

Case study of technical institutes in Ghana: access, equity, and institutional support for females

Introduction

Historically, TVET in Ghana supported gender disparity in which men had access to education in specific professions and those professions financially favored males. Anchored on age-old gender-specific norms and role expectations, stereotypes about women continue to result in prejudices that define what professions women can and cannot enter. This results in TVET institutions offering so-called “female” professions. Gender disparity extends to institutional offerings in which technical education has traditionally been predominated by men, whereas women dominated vocational programs. While gender exists on a continuum, terms like “cis-gender,” LGBTQ+ terminology is beyond the scope of the current study.

This vocational fallacy, or what the author terms a silent normative trend, persists and influences female participation in “soft” TVET programs, which provide lower remuneration than the “hard” technical courses, resulting in gender inequities in training and the labor market (Nganda et al., 2021). Consequently, enrollment rates for women in technical education programs in the country’s technical institutes are poor. The Ghanaian government has recently implemented a “Free TVET for All” program to address this problem. This case study explores institutional initiatives to ensure gender parity access in Ghanaian TVET.

Methods

The study examined the experiences of 10 non-traditional female students attending two technical institutes in Greater Accra. The participants were between 22 and 25 years old. In each institution, a focus group of five students was convened for 35-minute discussions. The data were analyzed using thematic analysis to establish the main patterns of meanings within the dataset.

Findings

Access

Even though most participants acknowledged relatively fair admission practices, they highlighted institutional and societal factors hindering women’s technical education participation. Such factors helped maintain and produce new forms of inequalities in technical education access. The participants particularly stressed that their decisions about choosing specific technical pathways were informed by “advice” from teachers, peers, and family members, mainly based on gender-entrenched expectations and gender-based normative beliefs and perceptions. The following comment encapsulates general sentiment from the participants, “the teachers, friends, and even some of our family members discouraged us from enrolling in purely technical programs because it is the male sector, and we would be seen within the society as “obaa-barima” (literally translated as ‘woman-man’ or preferably ‘Tomboy’).” Such attitudes substantially limit women’s abilities to access Ghanaian technical education.

Equity

In this study, an examination of equity was focused on how gender social constructions are treated within the selected institutions in terms of program channels and whether students had access to high-quality opportunities and support to achieve equally high outcomes, regardless of circumstances (Gioiosa, 2014). While participants acknowledged the availability of teaching and learning resources for all students (relating to the fairness component of equity), they perceived a sense of bias regarding being assigned specific tasks generally classified as male-oriented. This, to a large extent, affected the inclusivity of technical education programs, which may create achievement gaps between male and female students.

Institutional support to foster equity, diversity, and inclusion

The study revealed no institutional support structures to foster gender equity, diversity, and inclusion in the selected technical institutes. The participants identified several institutional challenges such as lack of information to prospective students (both traditional and non-traditional students), eligibility criteria that may affect access, and other institutional issues that discourage female participation in technical education. Also, the participants mentioned the lack of counseling services as an institutional deficiency affecting completion rates.

Analysis & conclusion

While this paper would not attempt to describe as mere rhetoric the mantra “Technical education for all,” the author contends that not enough has been done to change the stigma associated with women’s participation in “hardcore” technical education programs in Ghana. More needs to be done to promote gender equity, diversity, and inclusion at the institutional and, more importantly, national levels. It is essential for technical institutes and government agencies responsible for TVET in Ghana to realize that access to technical education does not begin at enrollment. Instead, it starts with the messages and outreach used to attract diverse and underrepresented students (Gioiosa, 2014). Therefore, institutions should intensify initiatives to encourage women’s participation in technical education programs.

Case study: United States community colleges: impact of global learning experiences on career-technical and rural students

Introduction

This case study explores how Career Technical Education (CTE) students at a community college in the United States participate in global learning experiences and the impact that these experiences have on them personally and professionally. CTE students are often considered non-traditional and identified with underrepresented populations, such as low-income, rural, and immigrant students. This research aims to examine and compare the experiences of CTE and rural students and explore how the Sector helps them in terms of access, support, completion, employability, and the communal impact.

Methodology

The study uses a mixed-methods, explanatory sequential design to collect data. The quantitative portion explored the overall college enrollment data relative to intercultural experience by subgroup. Descriptive statistics and regression analysis provide a deeper understanding of the make-up and profile of enrollment vis-a-vis intercultural experience participation. The qualitative portion delves into students’ experiences to hear their unheard voices related to access to experiences, motivations, challenges, and impact on their subsequent personal, educational, and professional lives.

Findings

Diversity

In this study, CTE students originated from non-traditional populations, including those identified as low-income, minority, first-generation, single parents, part-time, working-class, over age 25, and rural. Twenty-one percent of students are rural, 31% of CTE, 23% nonwhite, 25% first-generation, and 21% older than 25.

Equity

Non-traditional TVET students tend to struggle in some ways, whether economic or physical, due to discrimination or other means. McGrath et al. (2020) created the new term “critical capabilities

account of vocational education and training” or CCA-VET. Central to CCA-VET are the concepts of VET learners’ experiences of multidimensional poverty, a broad conceptualization of work, a focus on flourishing, the importance of aspirations, and an understanding of the many decision points for vocational learners. Thus, while the majority of the students in the CTE case study were from low-socio-economic status, the remaining components of CCA-VET tell the story of the experiences of VET students, including their aspirations and understandings of work and how it fulfills them or makes possible social mobility, or personal integrity and respect.

Inclusion

The global economy demands that students of all backgrounds and academic disciplines, including those attending TVET, obtain the global skills that intercultural experiences provide. Institutional policies and practices from this case study’s community college support the success of TVET students through the Guided Pathways model implementation that asserts TVET students and all community college students require structure, individual coaching, and defined pathways to ensure success (Bailey et al., 2015). Structural barriers to success need to be re-visited and addressed through proactive advising and coaching students, meeting them where they are and acknowledging their stories and struggles.

Analysis and conclusion

This study contributes to SDG4 Quality Education by exploring the impact of offering equal access to global learning opportunities in the United States community colleges in CTE programs. SDG4.7 indicates all learners should acquire knowledge and skills needed to promote global citizenship and appreciate cultural diversity. This study looks at how one college provided opportunities for global learning to CTE students comprised often of low-income and underrepresented student populations and how this SDG is furthered as a result. With the current focus on social justice for marginalized groups in society and the assertion that international education is a possible means for the betterment of society (Brandenburg et al., 2019), it is possible to see the advantages of offering TVET students intercultural experiences. TVET institutions impact students by helping them obtain gainful careers and, as a result, contribute to building a more equitable and just society. For the students in this study, post-graduation pathways expand social networks and open new career pathways. These students have a greater potential for social mobility because of their international experience (Raby & Valeau, 2022).

Discussion

Even though the five case studies described in this paper were conducted by different researchers in different geographic locations, and settings, they all examine experiences of non-traditional CC and TVET students and the role their institutions play in advancing social justice and building a socially conscious society. This is done by providing equitable opportunities that flip the purpose of CC/TVET from a structure defined by economic needs to a system’s goals defined by students and represent a more human-centered, capabilities approach (McGrath et al., 2020). The comparison is grounded in the three research questions.

Research question 1: what are the experiences of different groups of non-traditional CC and TVET students?

Each case study examines a sector of non-traditional students. Some students experience serious challenges navigating college structures. Others use college structures for success. Table 3 summarizes entities that complicate student experiences, such as life expectations and institutional regulations. Table 4 summarizes entities that support student experiences, such as family and peer support. All cases note that a lack of financial assistance is a deterrent to access and completing studies. Students in

Ontario, Quebec, and the United States note working full time is a constraint, while in Taiwan, Quebec, Ghana, and the United States, the constraint is family obligations. Institutional regulations that impact programs and program development are a constraint in Ontario, Quebec, and the United States., while political frameworks are a deterrent in Taiwan and Ghana. In all cases, peers and family are support systems in Canada and Taiwan.

Research question 2: how do institutional policies and practices support the success of such students in terms of equity, diversity, and inclusion

Each case study defined institutional policies and practices that support students in equity, diversity, and inclusion, as summarized in Table 5. The open-door policy makes access easier in Taiwan, Quebec, Ghana, and the United States. Services in Taiwan and the United States mirror one another. Specific services for non-traditional students are being developed in Ontario, Taiwan, Ghana, Quebec, and the United States. These are policies and practices common to most institutions in the Sector (Raby & Valeau, 2018).

Research question 3: how can the CC and TVET sectors contribute to building a just, socially conscious society?

Both theoretical constructs support the idea that the CC/TVET Sector contributes to society. Neo-Liberalism targets skill-based training whose jobs provide higher income to help students achieve mobility and benefit society (McGrath et al., 2020) as shown in Table 6. Educational gains include jobs for skilled international students in Canada, low-income in Taiwan, and women in Ghana. Capabilities target students' ability to choose pathways resulting in productive lives, strong

Table 3. Entities that complicate experiences of Non-traditional Students.

	CAAT, Ontario	TVET, Taiwan	CEGEP, Quebec	TVET, Ghana	CC, United States
	International Students	Low-Income students	adults	Rural students; women	CTE students, rural students
Working full or part-time	Yes	N/A	Yes	N/Y	Yes
Family obligations	No	Yes	Yes	Yes	Yes
Faculty	No	Yes	N/A	No	Yes
Counselors	Yes	N/A	Yes	Yes	N/A
Political framework & regulations	Yes	No	Yes	Yes	N/A
Institutional regulations	Yes	No	Yes	Yes	Yes
Financial Assistance	Yes	Yes	Yes	Yes	Yes

Table 4. Entities that support experiences of Non-traditional Students.

	CAAT, Ontario	TVET, Taiwan	CEGEP, Quebec	TVET, Ghana	CC, United States
	International Students	Low-Income students	Adults	Rural students women	CTE students, rural students
Family Support	Yes	Yes	Yes	N/A	N/A
Peer Support	Yes	Yes	Yes	Yes	Yes
Faculty	No	Yes	N/A	No	Yes
Political Framework & Regulations	No	Yes	No	Yes	N/A
Institutional Regulations	No	Yes	No	No	Yes

Table 5. Institutional Policies and Practices Supporting Non-traditional Students.

	CAATs Ontario	TVETs Taiwan	CEGEPs Quebec	TVETs Ghana	CCs United States
	International students	Low-Income Students	Adults	Rural Women	CTE Rural
Open-door policy		✓	✓		✓
Prep (remedial) courses	✓	✓	✓	✓	✓
Services for non-traditional students	✓	✓	✓		✓
Financial assistance		✓			✓
Pathway to a university		✓		✓	✓
Lifelong learning	✓	✓	✓		✓
Student Cohorts		✓	✓		
Equity, diversity & inclusion policies	✓	✓	✓	✓	✓
Poor Infrastructure	✓		✓	✓	

Table 6. Support for Non-traditional Students as a Contribution to the Sustainable Development Goals.

	CAATs Ontario	TVETs Taiwan	CEGEPs Quebec	TVETs Ghana	CCs United States
	Intern. students	Low-Income	Adults	Rural Women	CTE Rural
GOAL 1: No Poverty	✓	✓	✓	✓	✓
GOAL 2: Zero Hunger			✓	✓	
GOAL 3: Good Health and Well-being	✓	✓	✓	✓	✓
GOAL 4: Quality Education	✓	✓	✓	✓	✓
GOAL 5: Gender Equality	✓			✓	
GOAL 6: Clean Water and Sanitation					
GOAL 7: Affordable and Clean Energy					
GOAL 8: Decent Work and Economic Growth	✓	✓	✓	✓	✓
GOAL 9: Industry, Innovation, and Infrastructure	✓			✓	
GOAL 10: Reduced Inequality	✓	✓	✓	✓	✓
GOAL 11: Sustainable Cities and Communities	✓	✓			✓
GOAL 12: Responsible Consumption & Production					
GOAL 13: Climate Action					
GOAL 14: Life Below Water					
GOAL 15: Life on Land					
GOAL 16: Peace, Justice, and Strong Institutions	✓	✓		✓	
GOAL 17: Partnerships to Achieve the Goal	✓				

communities, and equity that supports socially just outcomes and advances social justice (Moodie et al., 2019). This is seen in Canada by providing opportunities for migrants in Taiwan through an emphasis on lifelong learning, in Ghana for opening jobs for women, and in the United States for the opportunity to change careers based on new knowledge.

Conclusion

The SDGs are widely represented in this article's case studies. Comparatively, the various institutions created a context that minimizes poverty through decent jobs and addresses hunger, poverty, and societal and economic conditions. The multiple institutions also perpetuate capabilities by using tertiary education to gain good health and well-being, non-traditional equality, and secure the foundation for peace and justice-focused societies.

This article highlights the role of the CC/TVET Sector in advancing sustainable development by enabling access to tertiary higher education and the way institutions support diversity and inclusion for non-traditional student populations. This comparative case study examines the experiences of several under-researched categories of non-traditional students in CC/TVETs and their issues. In Canadian CAATs, the institutions serve the unique needs of international students with EDI strategies that integrate them into Canadian society and transition to the labor market. In Taiwan, the TVETs support students

from low socioeconomic backgrounds by concentrating on whole-person education and providing them with opportunities to move between the two parallel streams, academic and technical/vocational. In Quebec, Canada, CEGEPs offer comprehensive preparation for reentry for adult students to upgrade their skills. In Ghana, TVET initiatives target gender parity through access to all TVET programs. Finally, in the United States CCs, programs help CTE and rural students in completion, employability, global learning, and community impact.

Access is central to these comparative case studies in advancing sustainability when viewed through the neo-liberal and capabilities narratives. Through neo-liberalist perspectives, education enables gainful employment, allowing graduates to earn more money, gain socioeconomic mobility, and serve local communities. Aligned with capabilities, education empowers students to choose pathways that enable them to be happy with their choices and to become socially conscious of their roles in society.

This study contributes to the dialogue regarding CC/TVET's contribution to SDGs as it demonstrates that owing to their diverse but distinctive characteristics, CCs and TVETs are uniquely positioned to support non-traditional and underserved student populations. Many of the institutional support programs that benefit non-traditional students described in this study may be successfully adopted and/or extended by other Sector institutions in other locations.

Future research can include variations of this study in other geographic locations and/or those that focus on different non-traditional student populations. This study is intended to encourage more comparative research on non-traditional students within the CC/TVET sector.

Widespread economic, cultural, and social changes rapidly transform how we live and work. These changes have been so aggravated by the COVID-19 pandemic that our lives may never be the same again, which offers new possibilities for the future. This new reality challenges educational institutions to provide students with relevant knowledge for our future world and address sustainability's centrality. Community colleges and other TVET institutions have a vital role in achieving this goal.

Disclosure statement

No potential conflict of interest was reported by the author(s).

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