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Addressing Mismatch between TVET Programs and Skill Needs in the Finance and Banking Sector – A Case Study from Qatar

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Abstract

Links between Qatar's labor market and post-secondary education are not fully effective and often result in neglected or duplicated development of human capital. Therefore, most development efforts occur in isolation involving outmoded programs with many complacent faculty unaware of new technologies and developments relevant to labor market sectors. Analyses of secondary data from government departments and international studies were combined with a survey on "Improving and enriching the Human Capital of the State of Qatar through Identification and Development of 21st Century Skills". This explored perception of both employers and TVET program leaders toward the skills needed for economic and social development in a changing world by meeting human capital needs through 21st century skills. A total of 85 managers and professionals completed the survey, together with 35 TVET program leaders from one university and five government TVET institutions (the survey was adapted to fit the context of TVET institutions surveyed). Thirty-two of the industry managers and professionals were from Hydrocarbon and Energy, 26 from Built Environment and 27 from Banking & Finance sectors. Subsequently, 32 semi-structured interviews were conducted. Descriptive statistics using T-test and effect size for comparison, showed a major mismatch between perceptions of TVET program leaders and business & finance sector' managers and professionals in many aspects of 21st century skills requirements. These were mainly in social skills and some specific technology skills. Significantly, the study indicated weak links between employers and TVET institutions. To address these issues, minimizing the skills' mismatch can be achieved by placing greater emphasis on reforming the curricula of Qatar's TVET institutions, to facilitate faster transitions into the workplace.

Introduction

During the last two decades, the economy of Qatar was one of the fastest growing in the world. Most of its growth is based on oil and gas that contributed to a solid basis for its economy. However, Qatar still has a strong dependency on revenues from the hydrocarbon industry, and the government pursues a vigorous policy of diversification aiming to reduce the dependency on that single sector. In recent years, non-hydrocarbon sector

has grown as a share of real GDP and government projects, funded by hydrocarbon revenues, continue to play an important role (fig. 1). Qatar's Second National Development Strategy (2017-2022) recognizes the importance to diversify on all fronts through growth outside hydrocarbons. This would help manage both temporary and permanent shifts in the economic environment. The drive towards economic diversification has led to the development of a strong financial services sector. The key regulatory body for the financial sector is the Qatar Central Bank (QCB) in conjunction with the Qatar Financial Markets Authority, and the Qatar Financial Center Regulatory Authority. These strategic plans guide the development of a world-class sector that protects investors and consumers and supports innovation. The guiding framework for financial regulation ensures inclusive, healthy, and sustainable, economic growth. The QCB launched its second strategic plan in December 2017 and which is anchored on the objectives of Qatar National Vision (QNV2030) in diverting the economy towards a knowledge-based economy (General Secretariat for Development Planning 2008). This plan aims at promoting regulatory cooperation, developing human capital, fostering confidence, developing financial markets, and supporting the development of new products.

According to Observatory of Economic Complexity (OEC), Qatar is the 47th largest export economy in the world (OEC, 2020). In 2017, the country exported $52.3B and imported $21.6B. During the last two decades, the economy of Qatar was one of the fastest-growing in the world. Qatar recorded in 2017 a GDP of $166B and a GDP per capita of $128k. During the last two decades, non-hydrocarbon activity has grown as a share of real GDP. Government projects funded by hydrocarbon revenues continue to play an important role (Figure 1). Table 1 shows the key economic indicators during the last four years.

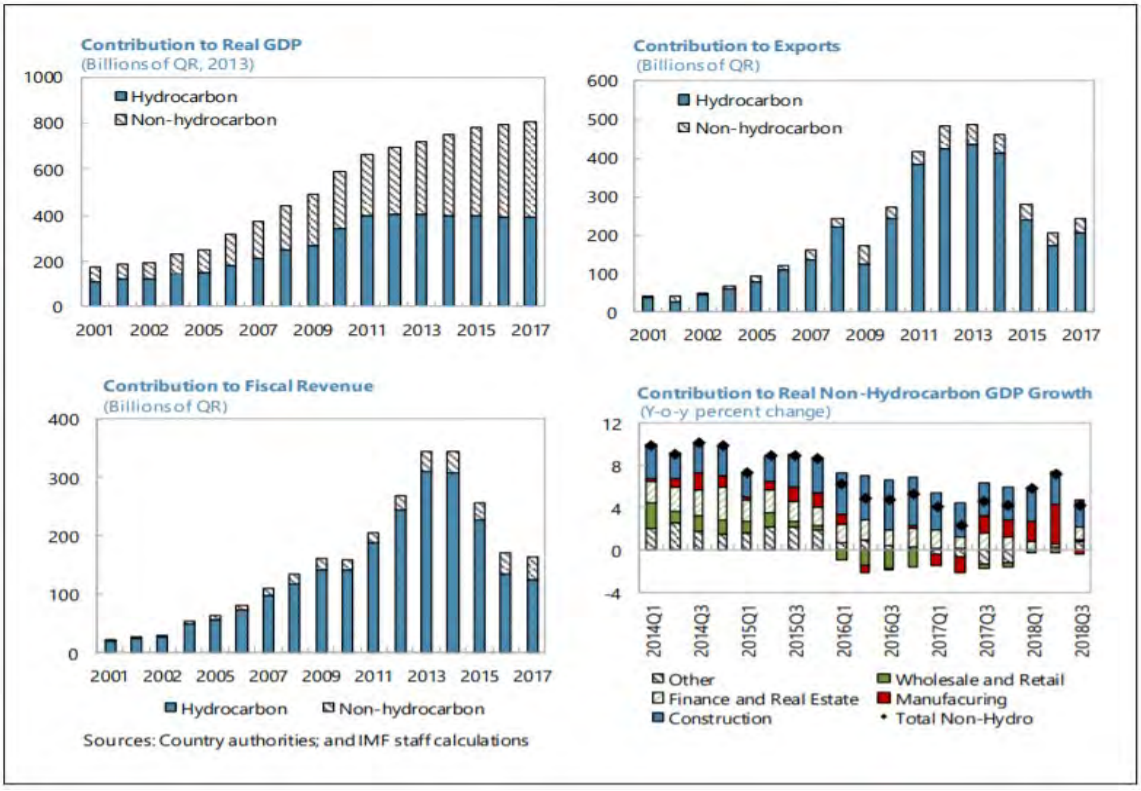

Figure 1. Contribution of Hydrocarbon and Non-Hydrocarbon Economic Sectors in Qatar from 2001-2017. Source: IMF, 2019

Table 1. Qatar's Key Economic Indicators

	2017	2018	2019	2020
Real GDP growth * (%)	1.6	2.6	2.9	3.1
Hydrocarbons: change in GDP* (%)	-0.7	-0.3	0.2	0.8
Non- hydrocarbon GDP* (%)	3.8	5.2	5.2	5.1
Nominal GDP growth (%)	10.0	13.8	6.5	3.9
Consumer Price Inflation (Consensus) (%)	0.5	<1	2.5	2.6
Fiscal balance (% of nominal GDP)	-5.7	3.3	5.1	5.9
Current account balance (% of nominal GDP)	3.8	9.2	8.9	7.9

** % In constant 2013 prices*

Source: PSA in coordination with MOF and QCB

With fluctuations in oil prices, international pressure to move towards a larger proportion of renewable energy sources as well as the acknowledgement of the finite nature of non-renewable resources, there is a need to develop economic policy and national skills that will allow Qatar to have a more secure future. The Qatar National Vision 2030 suggests a fundamental diversification of the economy and the development of a knowledge-based economy ("Qatar Second National Development Strategy," 2018). It "aims to transform Qatar by 2030 into an advanced country capable of sustaining its own development and ensuring continued decent life for its people"

Overview of Qatar Financial Services

During the mid-sixties, Qatar recognized that great dependency of the entire economy on foreign banking institutions and encouraged the creation of a number of domestic banks. As a result of that strategy, the National Bank of Qatar (QNB) was created in 1965 with half of its capital from the government and the other half from Qatari merchants. Qatar's banking sector has evolved into a mixture of domestic and foreign banks and has seen the emergence of Islamic banks during recent years.

At present, there are 18 banks engaged in the corporate and retail banking business (Qatar Central Bank, 2020). The government recently instituted the Qatar Development Bank, (QDB) a specialized developmental bank with the sole objective of providing credit to small and medium-sized enterprises. This is an area where development will be significant in terms of income, employment, and growth generation, which constitutes part of the diversification effort of the government.

All sectors of Labor markets, worldwide, are facing unprecedented change with the transformation to digital Era. Financial services, rely heavily on skilled employees, finding the right workforce is a strong challenge – and will become even more difficult in the future. To address this challenge, we need to explore what are the core skills gaps facing the financial services and to assess the extent to which leading practice in the development of 21st Century skills is present in Qatar, and identify barriers towards wider adoption in human capital development in financial services sector.

Methods

A mixed method methodology was developed for the research project to ensure that opportunities and challenges can be addressed. Mixed methods research involves collecting, analyzing, and integrating (or mixing) quantitative and qualitative research (and data) in a single study (Creswell 2013).Two methods of data collection were used in this research, secondary data analysis and survey of TVET leaders and employers' managers of the financial services sector in addition to semi-structured interviews.

Secondary Data Analysis

This is based on collection of secondary data on the status of secondary and post-secondary TVET institutions. Data were collected from some published literature and unpublished working paper on the framework for 21st century skills by members of the project team.

Overview of TVET Education in Qatar

Table 2 shows the number of TVET/Applied learning institutions in Qatar with possible higher education and career pathways. Table 3 shows the number and type of programs in post-secondary TVET institutions. Institutions providing programs associated with financial services are highlighted.

Table 2. TVET/Applied Learning Secondary Schools in Qatar Providing Programs Associated with Finance

Name	Type of school	Program Areas	Pathways
Debakey High School for Health Professions	International Private	DeBakey has three Technical and Vocational Education (TVET) tracks. 1. Health Science Technology 2. Engineering 3. Business.	Each track has an emphasis on career clusters that are possible. For example, The Engineering Career Cluster introduces students to the field and invites them to explore the many areas of engineering through scenarios and group projects that engage them in problem solving.
Qatar Banking Studies and Business Administration School – Campus for Males	Public	The School offers two TVET Tracks (Australian TAFE Certificates II and III), one course in Business Administration and one in Banking and Finance. There is a foundational year in Grade 10, with specialization in Grades 11 and 12.	Appropriate pathways into a College or University; Work (for example, internships leading to jobs); or the military.

Name	Type of school	Program Areas	Pathways
Qatar Banking Studies and Business Administration School – Campus for Females	Public	The School offers two TVET Tracks, one course in Business Administration and one in Banking and Finance. There is a foundational year in Grade 10, with specialization in Grades 11 and 12.	Appropriate pathways into a College or University or into work.
Qatar Technical Secondary School for Boys	Public	Australian TAFE Certificate II in a range of Engineering streams including Lab Technician. Also, Public Safety and Microsoft Imagine Academy programs.	TAFE pathways to Certificate III and IV level: (A) Certificate III in various Engineering streams; (Microsoft Certificate pathways and Technician Certificate Program (TCP) and Diploma – School of Engineering, CNA-Q.
Qatar Technical Secondary School for girls	Public	Recently established (2020) three technical specializations Laboratory Technician, Electronics and Communications and Information Technology (IT)	Appropriate pathways into a College or University or into work.
Qatar School of Science and Technology for Boys	Public	The school focuses on science, technology, engineering design and mathematics education in a transdisciplinary way. Courses include: Energy Lab Applications; Robotics and Automation; and Fabrication Lab	Universities in Qatar (Qatar University, Texas A&M university, Weil Cornell University, etc.)
Qatar Academy for Science and Technology	Private	Engineering, Computer Science, and Biomedical Sciences. Students actively participate in internships and research projects with academic institutes and industrial	Appropriate pathways into a College or University or into work. ((Qatar University, Texas A&M university, Weil Cornell University, College of the North Atlantic-Qatar, etc.)

Table 3. Postsecondary Universities and Colleges which Provide TVET Graduates

Name	Type	Year Established	Type of Programs
Qatar University	Public	1974	7 colleges - 52 departments Academic and Technical
Community College of Qatar	Public	2010	4 Major disciplines and 20 programs
College of the North Atlantic-Qatar	Qatar Government /Canadian institute academic programs	2003	5 major disciplines and 39 subprograms
Qatar Aeronautical Academy	Private	1977	Aircraft Maintenance Engineering, Metrology, Aviation management, Air Traffic Control
Stenden University	Private/Netherland Institute academic program	1999	Tourism related programs
University of Calgary	Government/ Canadian Academic programs	2009	Nursing and public health

Framework of 21st Century

The Organization for Economic Co-operation and Development (OECD) (2009) defines 21st Century skills as the ones that young people will be required to have in order to be effective workers and citizens in the knowledge society of the 21st century." The concept arose in response to the need to strengthen educational quality, with a strong orientation towards the rapidly changing world of work and the consequent need for flexibility and innovation. Thus, 21st Century skills include specific occupational skills that can be applied in diverse settings as well as generic skills such as creativity, critical thinking, communication, collaboration, financial, entrepreneurial and civic literacy; information, media, and technology skills; as well as life and career skills such as flexibility, initiative and self-direction, social and cultural skills, leadership and responsibility.

However, such skills are not well integrated within education and training and few assessment policies or practices are in place to assess them in many countries (OECD, 2009, p.4). To overcome the potentially instrumental focus on employment and livelihoods, UNESCO (2014) and Didham & Ofei-Manu (2013) argue for a renewed focus on the four pillars of education identified in the report of the International Commission on Education in the Twenty-First Century, entitled Learning: The Treasure Within (also known as the Delors Report): learning to know, learning to do, learning to be, and learning to live together. A fifth pillar has been elucidated by UNESCO (2014) as "learning to transform society and change the world" which includes the

skills and knowledge needed to work collaboratively for community well-being, social development, peace, and the transition to a low carbon economy and sustainability. These significant 21st Century skills are central to the development of human capital for the diversified, green knowledge economy envisaged in Qatar National Vision 2030 and related strategies for education and training (Ministry of Education and Higher Education 2011). For the purpose of this research, we have adopted a framework based on the above reports which consists of four major categories with a total of 17 essential skills as shown in Table 4 (Said et al. 2020).

Table 4. 21st Century Skills for a Sustainable and Inclusive Knowledge Economy in Qatar

Category of Skills	Higher Order Thinking	Personal and Social Skills	Technological Skills	Civic Responsibility Skills
Specific Skills	1. Learning to learn 2. Creativity and innovation 3. Critical thinking, problem solving, & decision making 4. Mathematical reasoning 5. Information Literacy.	6.Personal presentation and self-awareness 7.Conscientiousness and perseverance 8. Communication 9. Collaboration (teamwork) 10. Leadership	11. Digital literacy 12. Use of monitoring equipment and interpretation of data 13. Adapt to new technologies	14. Citizenship - local and global 15. Cultural awareness and competence 16. Perspective taking and fair-mindedness 17. Environmental awareness

Survey of Employers and Senior Leaders & Program managers of TVET Institutions

Pilot Study and Reliability Test

The research plan indicated that, the survey instruments would be adapted from those used in a previous study (Maclean, Jagannathan, & Panth 2018). The Maclean et al study explored the links between research, policy, and practice to enhance quality and relevance of skills development systems particularly in industries with potential for high employment, growth, and greening in four Asian countries. The main research findings of the study concerned education and skills for inclusive growth, green jobs, and the greening of the economy for each country. The research question for this study, as identified below, had a focus on strategies for the postsecondary education sector in Qatar and the role of Human Capital, including 21st Century Skills, of which green skills and greening of the Qatar economy are a subset. What are validated strategies through which the post-secondary education sector in Qatar (and more specifically those institutions of Applied Learning (TVET)), can optimize the role of Human Capital in development, thus serving the needs of end-users in energy (hydrocarbons), financial services, built environment and the education sector? 6 Particular attention in this study is given to (1) identifying 21st Century Skills from the perspective of Government, industry and the training sector, (2) assess how well they are being addressed, (3) identify and assess potential reforms and (4) recommend policies and strategies through which 21st Century Skills and current views on human capital may

be developed further. It stated in the research plan that online and telephone surveys will be used for large numbers of stakeholders; with in-depth interviews and workshops planned to gain deeper insights. However, to test the revised instruments, the method used for this pilot was what Creswell (2003) termed Concurrent Triangulation Design. That is, qualitative and quantitative data were collected concurrently. Researchers collected survey data and interview data at the same time. The results were then inputted into an online survey tool for analysis. With permission of the respondents, the interviews were taped. The open-ended questions were transcribed to ensure accuracy. The results of the survey data and the interview data were then compared. This method is used to "confirm, cross-validate or corroborate findings" (CIRT, n.d.). The main advantage of this method is that it can overcome the weakness of one method with the strength of the other. It is also useful for deepening the quantitative data through the collection of open-ended, qualitative data. There was some discussion about how many qualitative interviews are enough to provide a range of themes and perspectives. Baker and Edwards (2012) reviewing the findings of a number of experts, conclude that if time is short 12 interviews would be enough to provide clear views. This pilot was trialed on 15 participants.

The survey titled on "Improving and enriching the Human Capital of Qatar Through Identification and Development of 21st Century Skills" was distributed online to more than 50 TVET program leaders and 150 senior managers and professional employees from different companies and enterprises in three sectors, specifically:

- Hydrocarbon and Energy sectors
- Built and environment sector
- Finance and banking sector

Thirty five responses were received from TVET sector and 85 from industry sectors among them 27 from the financial services sectors representing 18 financial firms and banks. In addition to 32 semi-structured interviews, this survey was intended to explore the perception of both industry employers and TVET program leaders toward the needed skills for economic and social developments in a changing world by meeting Human Capital Needs through 21st Century Skills. The survey was divided into six sections, four major sections, in addition to a section on demographic information about the person filling the survey and his/her company or institution (section-1), and another section for general comments and open-ended questions (section-6). The survey was a structured questionnaire with both close and open-ended questions. Responses to statements were chosen either on a 5-point Likert-type scale (ranging from 1-very unimportant /very insignificant to 5-very important/strongly significant, section-1); or on a 4-Likert scale (section-2) with one section includes multi answers. The surveys were translated to Arabic using the back-translation method

The six sections of the survey are:

1. Information about the surveyed, and the company
2. Drivers of Changes
3. Environment, Social, Health and Safety planning and practices
4. Skills required for/and in, the workplace.
5. Training, Research, and the Changing World of Work
6. General comments.

Internal consistency (reliability) measured by Cronbach's alpha, during the pilot stage, was determined using SPSS software version (22). Reliability of 26 items of section 2 (drivers of change) was 0.861 and for the 18 items of section 4 (Importance of Skills Required for/and in, the workplace) was 0.809 from responses of employers and 0.848 from TVET program leaders' responses. Despite this high reliability, have reduced the number of questions based on feedbacks from the interviewees. Driver of changes total items become 18 items instead of 26 items in the original survey; 17 items instead 18 items. The reliability results, generated from the wide administration of the survey of the subset of `questions of each section of the required skills, remained high for all the four categories of skills, as shown in Table 5. The high reliability values indicate that items included in each subset has captured the concepts of each construct (subset) sufficiently.

Table 5. Reliability Statistics on 21st Century Skills Survey

Group	Subset of Skills	Number of items	Cronbach's Alpha
All employers and TVET Leaders	All Skills	17	0.879
	Higher Order Thinking	5	0.961
Employers in Financial Sectors	Social Skills	5	0.931
	Technological Skills	4	0.959
	Civic Responsibility Skills	3	0.825

Results

Needed 21st Century Skills in the workplace

The survey asked the respondents to indicate the degree of each of the major skills required by their employees in the workplace. Table 6 summarizes the results of both TVET and hydrocarbon sectors. The table shows descriptive statistics of all the 17 skills of the four mentioned categories of the 21st century skills.

Table 6. Required 21st Century Skills: Finance Sector Managers and TVET program Leaders

	Factor		M	STD	Chi Square Test	Sig. 2-sided	Effect Size* (Hedge g)
1.	Please indicate the degree of Higher Order: Learning to learn	Employers (Finance)	4.0000	1.18322	2.982	.561	0.13
		TVET	4.1429	1.06116			
2.	Please indicate the degree of Higher Order: Creativity and innovation	Employers (Finance)	3.9048	1.13599	1.362	.851	0.03
		TVET	3.9429	1.21129			
3.	Please indicate the degree of Higher	Employers (Finance)	3.8095	1.36452	6.942	.074	0.36

	Factor		M	STD	Chi Square Test	Sig. 2-sided	Effect Size* (Hedge g)
	Order: Critical thinking, problem solving and decision making	TVET	4.2000	.67737			
4.	Please indicate the degree of Higher Order: Mathematical reasoning	Employers (Finance)	4.0000	1.04881	2.828	.587	0.03
		TVET	3.9714	.92309			
5.	Please indicate the degree of Higher Order: Information Literacy	Employers (Finance)	4.0000	1.37840	2.743	.602	0.07
		TVET	4.0857	1.06747			
6.	Please indicate the degree of Personal and Social Skills: Personal presentation and self-awareness	Employers (Finance)	4.3810	.97346	8.377	.079	0.33
		TVET	4.0857	.78108			
7.	Please indicate the degree of Personal and Social Skills: Conscientiousness and perseverance	Employers (Finance)	4.0476	.92066	2.071	.558	0.39
		TVET	3.6571	1.08310			
8.	Please indicate the degree of Personal and Social Skills: Communication	Employers (Finance)	4.2381	.76842	3.698	.448	0.48
		TVET	3.7714	1.13981			
9.	Please indicate the degree of Personal and Social Skills: Collaboration	Employers (Finance)	4.3333	.96609	5.436	.245	0.049
		TVET	4.2857	.95706			
10.	Please indicate the degree of Personal and Social Skills: Leadership	Employers (Finance)	4.5238	.92839	14.502	.006	0.59
		TVET	3.9714	.92309			
11.	Please indicate the degree of Generic Technological Skills:	Employers (Finance)	4.0952	.94365	5.256	.262	0.07
		TVET	4.0286	.89066			

	Factor		M	STD	Chi Square Test	Sig. 2-sided	Effect Size* (Hedge g)
	Digital or IT literacy						
12.	Please indicate the degree of Generic Technological Skills: Use of monitoring equipment	Employers (Finance)	4.1429	.91026			
		TVET	3.9714	.95442	8.441	.077	0.18
13.	Please indicate the degree of Generic Technological Skills: Interpretation of data	Employers (Finance)	4.2381	.88909			
		TVET	3.600	.94558	16.479	.002	0.69
14.	Please indicate the degree of Generic Technological Skills: Adapt to new technologies	Employers (Finance)	4.1429	.96362			
		TVET	3.8857	1.05081	4.268	.371	0.26
15.	Please indicate the degree of Civic Responsibility: Citizenship – local and global	Employers (Finance)	4.4286	.50709			
		TVET	3.7429	1.14642	13.191	.010	0.77
16.	Please indicate the degree of Civic Responsibility: Cultural awareness and sensitivity	Employers (Finance)	4.5238	.51177			
		TVET	3.8857	1.02244	13.189	.004	0.79
17.	Please indicate the degree of Civic Responsibility: Environmental responsibility	Employers (Finance)	4.4286	.59761			
		TVET	3.6857	1.18251	9.179	.057	0.79

* Effect Size $= (M_2-M_1)/SD_{pooled}$

Figure 2 shows priority skills as perceived by the financial services employers, determined by the employers' survey. Figure 3 shows priority skills, perceived by TVET program leaders.

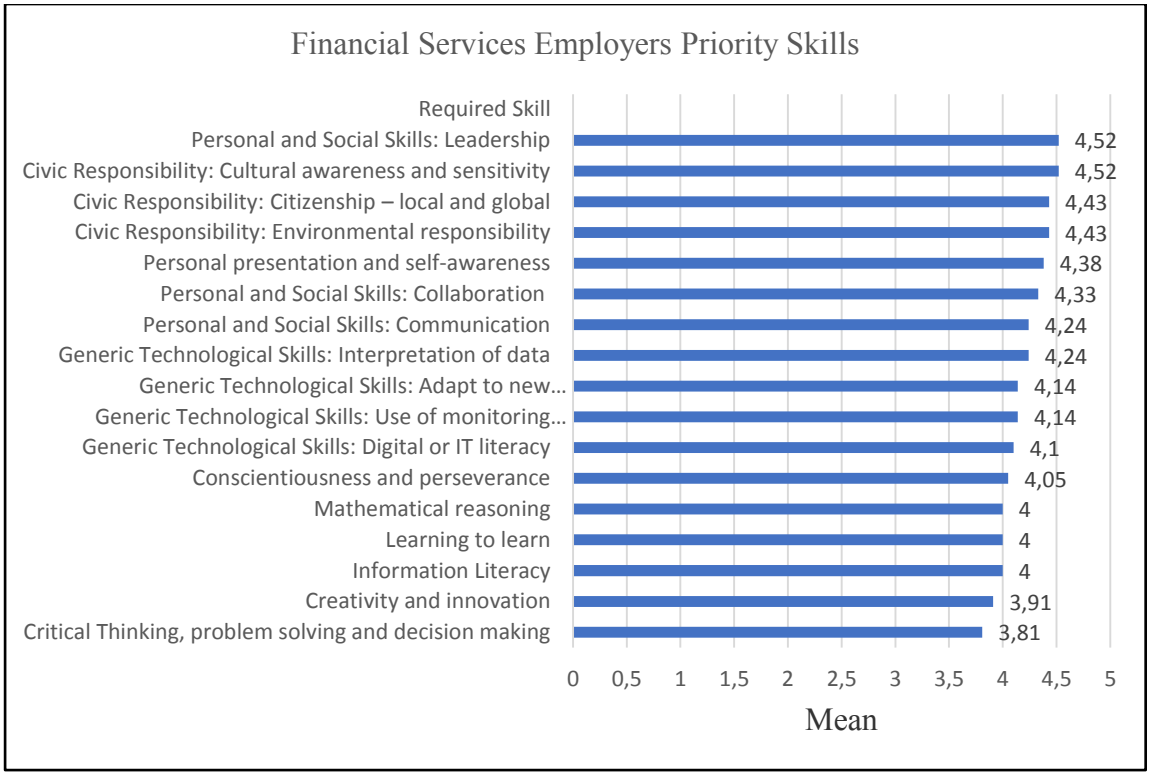

Figure 2. Priority Skills: As perceived by Financial Services Employers

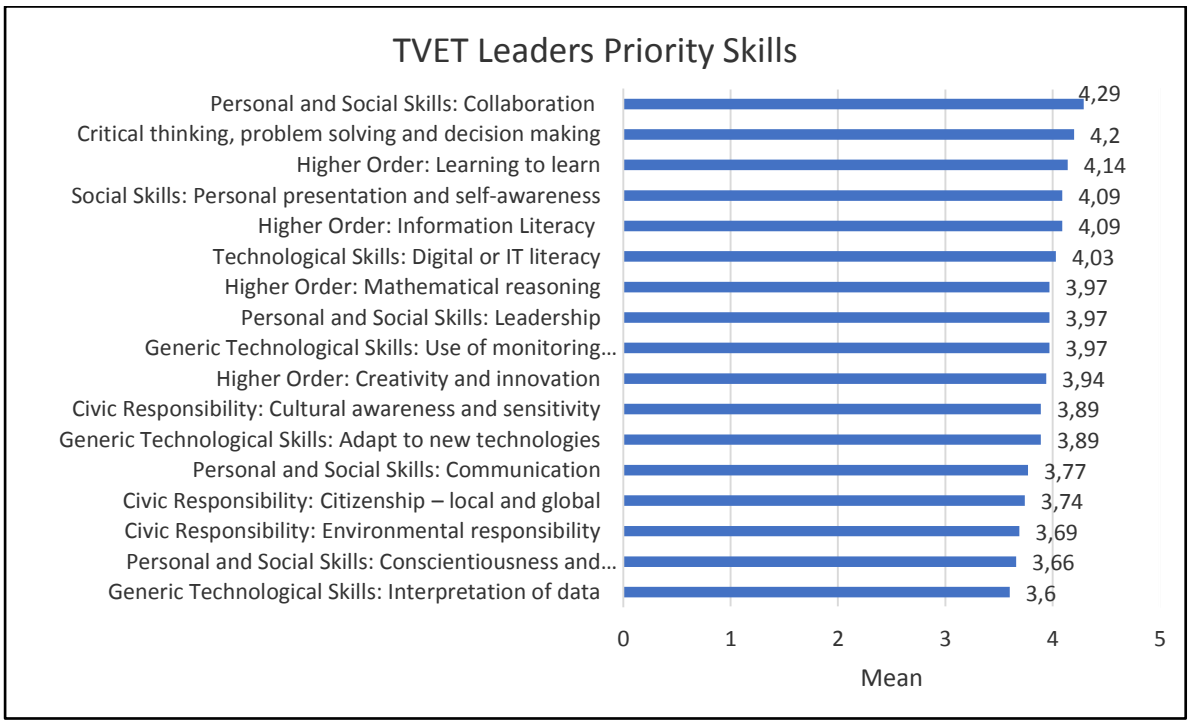

Figure 3. Priority Skills: As perceived by Financial Services Leaders

Engagement of Employers with TVET Institutions

Employers were asked to indicate their involvement with TVET institutions in any kind of engagement. Results

are shown in Figure 5. TVET leaders were asked if their programs were approached by employers for training their employees on any type of the 21st century skills Results are displayed in Figure 6.

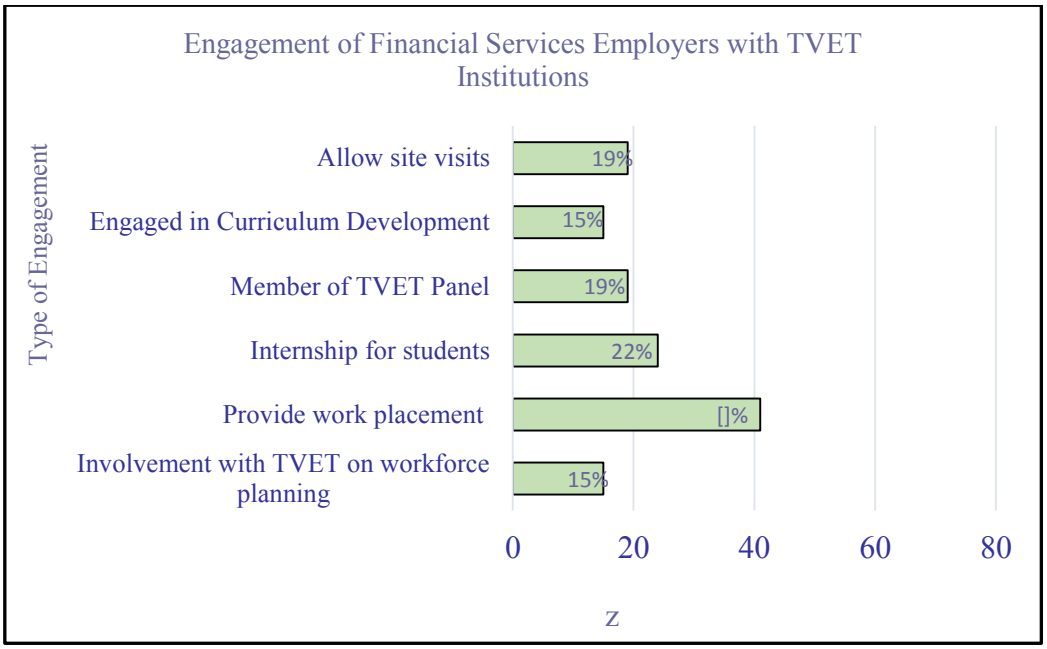

Figure 5. Engagement with TVET- Institution

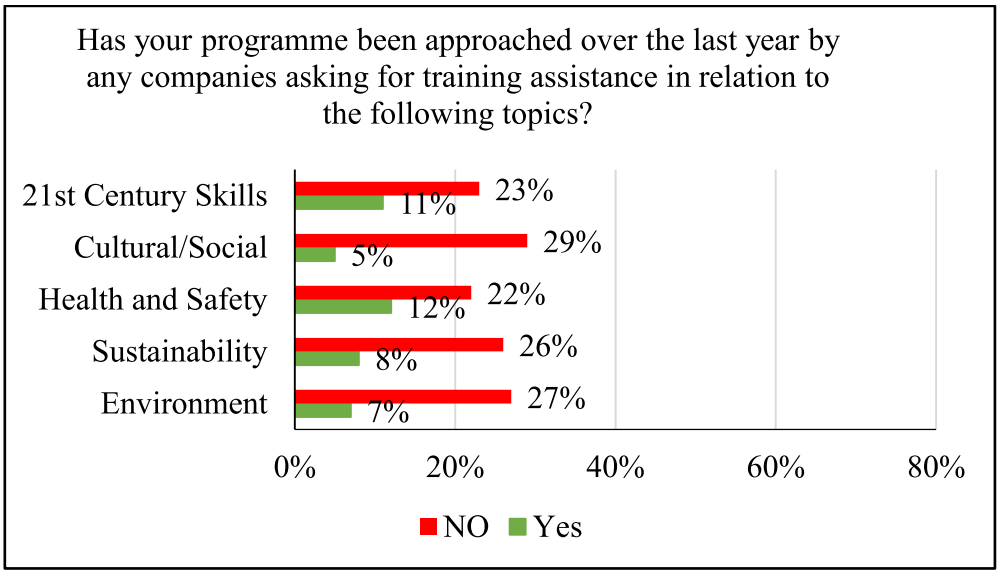

Figure 6. Approach to TVET institution for Training

Discussion

Effect size is used to compare the perceptions and practices of employers with those of TVET providers although statistical significance (p-value ≤ 0.05) is also used as an approximate indicator to the existing difference; ES is used because, when a difference is statistically significant, it does not necessarily mean it is big, important, or helpful in decision-making. It simply means that we are confident that there is a

difference. To know if an observed difference is important or meaningful, we need to determine how effective this difference is (Cohen 1988). Cohen suggested a scale to interpret the value of effect size, which is widely used by social scientists based on a general guide developed by Cohen (Smith 2004 & Patton 1990)

- < 0.1 = trivial effect
- 0.1 - 0.3 = small effect
- 0.3 - 0.5 = moderate effect
- > 0.5 = large difference effect

Table 5 and Figures 1 and 2 show that there is a clear skill gap between the TVET institution programs and the requirements of most of these skills as per employers' perceptions despite the fact that both sectors consider these skills as essential and critical. However, they differ in the degree of importance of these skills, which their employees need to acquire. For almost all these skills, employers show greater importance than TVET leaders. For example, employees consider the degree of Personal and Social Skills: Leadership (factor 10) as of high importance compared with the requirement by TVET programs (ES=0.59) despite that, the latter also show its significance as shown from the high mean among respondents. Exception is factor 3, the degree of higher order: critical thinking, problem solving and decision making TVET leaders' perception is moderately higher (ES= 0.36). On the other hand, both employers and TVET leaders consider the degree of higher order: mathematical reasoning of high importance with negligible difference between the two groups (ES= 0.03). Degree of generic technological skills adapt to new technologies (item 14) are highly important for both sectors with small difference (ES= 0.26).

Employers consider social skills (Items 6-10) as highly important skills that their employees should acquire. They have a priority over cognitive and technological skills as can be seen from the higher values of average means of all the five items, compared with other skills, with moderate to high ES values compared to perceptions of TVET program leaders (except collaboration skill in which the difference is negligible). Deepa and Seth (2013) noted that most employers focus on communication skills when they are hiring employees. Cunningham and Villasenor (2016), based on surveys of employers from around the world, stated that firms often struggle to find workers with high level of social and interpersonal skills.

At the top priority is the need of preparing leaders with high social and managerial skills to ensure the mobilization of resources, ability to motivate teams to achieve objectives, empowerment, team building and negotiation skills (Sohmen, 2013). On the top of all skills are the civic engagement and responsibility skills (items 15-17). The importance of engaging in civic life, and within multicultural workforce, in addition to improving the well-being of individuals and society, in general, it shows that business becomes more competitive and more profitable. Cultural awareness means that an individual can interact, communicate, and negotiate with people from diverse cultural backgrounds, while maintaining professionalism and good relations. The demand for employees with multicultural awareness has grown exponentially with the increased level of globalization (Deepa & Seth 2013). Training employees on soft skills inside the workplace proved to have significant impacts on productivity and efficiency in performing complex tasks (Adhvaryu et al. 2018).

According to McKenzie report (2015), companies across Canada, Latin America, the United Kingdom, and the United State, which are in the top quartile for racial and ethnic diversity, are 30 percent more likely to have financial returns above their respective national industry medians (McKenzie 2015). Qatar workforces consist of multi-diverse employees and managers from various countries and cultures, and therefore civic responsibility and cultural awareness are critical for a successful performance of the labor market. Among these (civic) skills are the work ethics, voluntarism, and social responsibility. These acquired skills build trust, between employees in the organization as well as other members of the society (Grese, Kaplan, Ryan & Buxton, 2000).

A manager of a company during the interview was asked to draw conclusions about future skills patterns or needs in his company about these general types of skills and how well his staff displays them? He said:

> "*The first thing that I would like my staff to have is excellent communication skills and present their ideas in a clear and precise manner. The second thing , is the requirement of cultural sensitivity because of the environment we are in, is important to understand and I believe if our HR Department can have a good emphasis during the probation period of a new employee on this aspect as well because we belong to many cultures. The technological disruption – we really need to be adaptive to. Our employees needs to adaptive to technological disruption and work towards achieving the requirements of the 21st Century for which they need time out of their working hours to develop their own understanding of the changing technological world. I raise critical thinking, but the critical thinking is important for innovation. I think I marked it as average so we need to improve on that".*

TVET leaders' priorities are more concerned about specific technical skills in subjects' specific of programs, although the importance of these skills is highly perceived by employers as well (Table-5). For example, both employers and TVET program leaders, equally, consider the importance of digital literacy as a mean for the digital transformation because most business environments, banking, manufacturing industry, schools, and education methods have been rapidly digitized. This has been highly recognized during the COVİD-19 panademic (Crisonà (2021). The OECD Programme for International Student Assessment (PISA 2018) focused on the assessment of reading. Digital literacy was the essential component of reading skills that includes assessing the ability of the 15-16 years old students to retrieve, read articles and understand whether statements in those articles were facts or opinions offered by the authors of the articles "*It looks at ways to strengthen students' capacity to navigate the new world of information. It studies the ways in which students access digital technology, how skilled they are with complex digital reading"* (OECD 2021). Qatari students scored 407, international average was 487, in the digital literacy part on reading item and distinguishing facts from opinions and access to training on how to detect biased information, and Qatari students scored 40% compared with international average of 47%.

A banker interviewee said:

> *"we need knowledge and skills about digital and technological solutions, digital skills are being integrated within curriculum of most education programs in some countries, and in a decade or few years more, some workplaces may not need IT section for support of their employees, because digital skills are becoming like reading and writing everyone will need to know, we just need to introduce a*

meaningful strategy to develop the skills in students and employees ".

Also, both sectors equally perceive mathematical reasoning as highly important (ES= 0.03), despite that the TVET employers placed the skill as 7th in the priority list while employers placed it as 13th in the list. More surprisingly, critical thinking and problem solving skill is ranked the least by financial services employers, while it is ranked 2nd by TVET program leaders. It is the belief of the authors that, employers of this sector who filled that survey, probably perceived critical thinking as a feature associated with academic curriculum of science and mathematics, rather than a workplace feature. An executive interviewee from an insurance company said:

"Provide us with young, well dressed, smiley faces with strong interpersonal skills, good communication skills, team players, and we will train them technically".

Few employers, however, indicated the need of critical thinking and problem solving as an essential required skill

Another employer, a head of a section in a bank said:

"We need a combined mix of technical and human skills; we believe that our requirements are not well in align with the requirement of education systems which normally focus on business and financial services knowledge"

One manager said:

"We *need to have a balance of both the technical and soft skills. I have seen good soft skills but their technical is poor. I have seen good technical with poor soft skills. The balance is critical".*

Active Engagement with TVET/Applied Learning institutions and universities

Figures 3 and 4 show low levels of engagement and collaborations between the financial services sector and TVET institutions. Only four out of the 27 respondent employers (18 financial firms) said they have a formal link with TVET institutions and are involved in workforce planning, five allow site visits and seven offer internships, and eleven offer work placement. TVET program leaders, as shown in figure-4, echo similar picture. Only few TVET providers reported that employers have approached their institutions for training or up skilling their employees. TVET program leaders said:

"We invite many of them to attend our seminars, lectures, conferences but responses are weak; lack of time is always the reason for their declines".

Another program chair said:

We struggle to have conversation with them; we need to discuss with them about the skill needs so that we can review our curriculum to meet their needs".

However, certain TVET program leaders have stated that they do have good relations with labor market employers. A vice principal of an applied learning school that provides three types of applied learning programs (business is among them), gives a better picture saying:

"*We have an advisory committee which includes representatives from industry related to each program, however, the links are not strong enough we must have stronger links with industry and university.*

The need for strong link with industry is critical in evaluation and accreditation of TVET programs. An engineering program head said:

"*We need to involve the industry, if we are talking about the 21st century skills, in my opinion, the accreditation of the programs will be different, because we need to involve industry for evaluating our programs, etc., because we want to develop and, tailor our programs to address these skills, which are needed by industry. We also need for example, to consider placements for faculty members in industry. So they can go to industry spend a couple of months there as well as for our students. So the internship components in the program is very important, so we need to give more opportunities to our students and faculty members to spend time with industry sector, this is very, very important".*

Conclusion

Results from this study indicate, that traditional skills demand in financial services sector, is declining and replaced with soft social skills such as leadership management skills; teamwork, decision making, communications, collaboration, presentation and self-awareness.; civic responsibility and technology based skills. The new roles of financial sector employees will evolve in more complex and technical environment. Automation and big data analytics are vital to improving operations and productivity. A common trait across all roles is an understanding of technology and how it can improve efficiency. The core duties of any position will likely involve some form of interaction with computer applications. The ability to quickly learn new programs and adapt to process changes is key to career longevity .Regulatory changes and advanced technologies demand a workforce with particular skills where professionals are not only expected to be equally familiar with traditional fundamentals and new technology but also need to display a variety of specialized skills and business acumen.

The results also indicate that there are clear skill gaps between TVET institutions programs and the evolving skills required by financial service sector in Qatar. There are insufficient alignments between the TVET curriculum and the sector needs. This requires improving the quality and reorienting the curricula of TVET, applied learning programs to accommodate for these changes, and develops balanced curricula. For high – skilled occupations, there is a pressing need to give more attention to soft human and technology skills. Intensive collaborative efforts are required to raise awareness among financial sector employers, in both public and private sectors, regarding the needed 21st century competencies.

Recommendations

TVET institutions need to re-orient their curricula to accommodate for the emerging 21st century skills with a focus on a balanced curriculum that combine social soft skills, technological and professional (know-how) skills, This should, also, include integration on-the-job training and lifelong learning into the TVET curriculum

to ensure that graduates are job-ready and adaptable to changing skills requirements. This requires developing effective partnerships between TVET institutions and employers by encouraging companies and other key stakeholders to co-operate in TVET planning and processes, including curriculum design, training, mentoring, and feedback on skills need planning. The new skills require raising teaching quality of TVET instructors and trainers by increasing the qualifications levels, required of TVET leaders and teachers, and making pedagogical training obligatory, to ensure the delivery of balanced curricula.

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