LEADING THE COUNTRY IN TVET: DON BOSCO TECHNICAL VOCATIONAL EDUCATION AND TRAINING CENTER

by

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TABLE OF CONTENTS

LIST OF TABLES

LIST OF FIGURES

ABSTRACT

Technical and Vocational Education and Training (TVET) has the potential to reduce the persistent problem of unemployment because it can reach a greater number of the population and because it provides skills that are needed in the workplace. This case study examined an exemplary TVET school - Don Bosco Technical and Vocational Education and Training Center, which has attained a 100% employability rate among its graduates. Don Bosco achieved this employability rate by establishing partnerships with industry and working closely with its partners in the training and education of its students. Using the Clark and Estes (2008) gap analysis conceptual framework, this study specifically investigated the knowledge, motivation, and organizational assets of the administration of Don Bosco, that has allowed it to forge over 100 partnerships with businesses and industry, and secure about 40 scholarship benefactors. A qualitative study was employed, with data provided from interviews with 13 members of the administration, document analysis, a survey among the administration, and observations.

The study revealed that the administration engages with industry on the critical aspects of the training which include curriculum development, on-the-job training (OJT), physical facilities and training equipment, and instructional support. Industry needs are integrated into the curriculum, thereby producing graduates who have the relevant skills. The school has a network of alumni who provide referrals that open up new partnerships, and whose reputation for doing good work attracts industry to Don Bosco. The mission of Don Bosco drives the administration, and the separate and autonomous unit focused on TVET, with a dynamic leader, are additional assets of the school. Recommendations are presented to schools who wish to expand or establish their own technical and vocational education and training programs.

CHAPTER ONE: INTRODUCTION

The problem of practice addressed in this dissertation is the global problem of unemployment. There were 197.7 million unemployed people around the world in 2016, producing an unemployment rate of 5.7%. The number of unemployed individuals is expected to continue to rise to 201.1 million in 2017 and further to 203.8 million in 2018, resulting in unemployment rates of 5.8% in 2017 and 2018 (International Labour Organization [ILO], 2017). Unemployment is even worse among youth. For those between the ages of 15 and 24, unemployment was 71 million in 2016, representing a 13.1% youth unemployment rate, more than double the total unemployment rate. Youth unemployment is expected to remain at these levels in 2017 (ILO, 2016). McKinsey conducted a survey in 2012 of youth aged 15 to 29 in Brazil, Germany, India, Mexico, Morocco, Saudi Arabia, Turkey, the United Kingdom, and the United States and found that 38% of the youth in these countries were employed, 30% were unemployed, 18% were looking for jobs, and 13% were employed part-time (Mourshed, Farrell, & Dominic, 2012). In the Philippines, which is the country of focus of this dissertation, the unemployment problem mirrors what is happening in the world. Although the total unemployment rate decreased to 5.5% in 2016 from 8% in 2010, the total youth unemployment rate remained at a high 13.5% in 2016 (Philippine Statistics Authority [PSA], 2017), which is more than twice the overall unemployment rate.

Background of the Problem

Unemployment continues to be a problem among adults, but even more so among youth. Youth unemployment is indicative of the difficulty of transitioning from school to work and the ability to enter the labor market (Biavaschi et al., 2012). These are, in turn, influenced by several

factors such as demographic trends, economic growth, labor market flexibility, employment protection for permanent jobs, education, and training (Biavaschi et al., 2012).

Generally, the higher the education levels, the more job opportunities there are and the higher the earnings capacity (Organization for Economic Cooperation and Development [OECD], 2014, 2015). In OECD countries, 80% of tertiary-educated adults are employed, compared with 70% of adults with upper secondary and post-secondary non-tertiary education, and less than 60% of adults without upper secondary education (OECD, 2015). For adults with vocational upper secondary or post-secondary non-tertiary education, the employment rate is at 77%, higher by 7% than that of those with a general qualification (OECD, 2015). When it comes to earnings, using adults with upper secondary education as a base, those with lower academic qualifications earn 20% less, those with a post-secondary non-tertiary education earn 10% more, and those with a tertiary education earn 60% more (OECD, 2015).

While unemployment remains high worldwide, the irony is that there is also a shortage of skills. Almost 40% of employers surveyed in a McKinsey's (2102) study said that lack of skills was the main reason for entry-level vacancies (Mourshed et al., 2012). In Europe, unemployment rose from 7% in 2008 to 10.8% in 2013. In 2013, there were around 2 million vacancies available in European Union countries (OECD, 2016c). The Bureau of Labor and Employment Statistics (BLES) of the Philippines conducted a survey among employers covering the period from January 2007 to January 2008. The survey found that, despite unemployment affecting more than two million Filipinos, employers had difficulty filling vacancies because of a shortage of applicants with the right competencies and qualifications for the job (BLES, 2008).

Technical and vocational education and training, or TVET, has the potential to address the twin problems of unemployment and shortage of skills. Firstly, TVET systems are focused on

providing job-ready skills, making it ideally situated to meet the demands of the labor market. Secondly, TVET systems have immense potential to address the problem of lack of opportunities to acquire skills, which has been cited as one of the key reasons for unemployment (Marope, Chakroun, & Holmes, 2015). Thirdly, TVET is a viable alternative to securing sustainable employment for those who complete secondary education but are not able to proceed to college (Syjuco, 2012). Lastly, because of its close interaction with industry, TVET is well-positioned to address the problems of skills mismatch (Wang, 2012).

Partnerships with employers play a vital role in the provision of skills training (Polesel, Klatt, Blake, & Starr, 2017). Employers know best the skills needs, work processes, and technologies of their industries, and their involvement with education providers ensure that training is up-to-date and relevant (OECD, 2017). Employer's engagement in the design of the curricula, provision of workplace learning, assessment of the trainees' skills, and recognition of qualifications are essential to training success (Polesel et al., 2017). Effective skills training systems around the world emerge when employers and education providers step into each other's world, and when they work with the students early, treating skills training as one continuum - from enrollment to employment (Mourshed et al., 2012). This promising practice study in TVET shows how partnerships between industry and academe produce graduates who are highly employable and have the relevant skills needed by industry, addressing both unemployment and the shortage of skills.

Importance of a Promising Practice Project

It is important to examine promising practices in the context of the problem of youth unemployment for a variety of reasons. UNESCO's International Center for Technical and Vocational Education and Training, or UNEVOC, recognizes TVET's ability to train youth for

occupation-specific skills resulting in higher employability and better access to jobs (UNESCO-UNEVOC, 2013). While the problems of unemployment or underemployment continue to exist in almost all nations, including developed ones, promising practices in TVET provide a clear pathway to employment. This promising practice study in TVET has shown how partnerships between industry and academe produce graduates who are highly employable and have the relevant skills needed by industry, addressing both unemployment and the shortage of skills. Promising practices in TVET demonstrate effective collaboration between industry and academe, resulting in skills training that meets the needs of industry, which, in turn, leads to reduced training costs and greater productivity for the industry.

Promising practices in TVET implement guided on-the-job training (OJT), (also called apprenticeship, or workplace learning) to complement classroom instruction, allowing the trainee to learn the specific skills needed in the workplace. The dual apprenticeship system in Austria, Denmark, Germany, and Switzerland, for example, has been shown to help participants transition into the workplace, resulting in lower youth unemployment in these countries (Biavaschi et al., 2012). This promising practice demonstrates the key ingredients needed in TVET education that address the larger problem of unemployment.

Organizational Context and Mission

Don Bosco Technical Institute has 15 branches located in different cities in the Philippines, but this study focused on the main branch in Makati, the country's financial center. Don Bosco is a private Catholic school owned and operated by the Salesians of Don Bosco (SDB). Don Bosco has a grade school, a high school, and a skills training institute. The skills training institute, Don Bosco Technical Vocational Education and Training Center (Don Bosco

TVET Center or the Center), handles the technical-vocational programs and it is this department that was studied as a promising practice in TVET in this dissertation.

The Center was established in 1971 primarily to help poor and the out-of-school youth in neighboring communities gain decent employment by providing them with technical skills training. The mission of Don Bosco is to educate and evangelize young people through a curriculum with a technological orientation that promotes Gospel values to produce good Christians and upright citizens. This mission is consistent with Saint John Bosco's work where he spent a lifetime providing poor boys a technical education so that they may become productive members of society. Don Bosco is a non-stock, non-profit corporation, and the Center was certified as a non-government organization by the Philippine Council for NGO Certification (PCNC) in 2011.

Don Bosco has trained thousands of poor and out-of-school youth, and its graduates have gained employment locally and abroad. Since 2006, the Center has accepted an average of 1,000 students annually. The technical training in most cases is provided free to the students and through scholarships that the school solicits from its industry partners. Much of the success of the technical training institute today is because of the initiatives of its current head, Fr. Dindo Vitug. In his early 40s, Fr. Dindo has forged many partnerships with large corporations and has solicited support for training equipment, buildings, scholarships, and job placements.

Organizational Performance Status

The primary goal of the TVET Center is to help its students gain decent employment by providing them with a technical education founded on Christian values. Through the years, Don Bosco has done that. Don Bosco graduated 3268 students in the last 5 years, covering the school years from 2011 to 2015. Of these graduates, 3290 were employed, for an employment rate of

101%. An employment rate of 101%, higher than the actual number of graduates, is possible because some of those who dropped out were also able to gain employment. Table 1 shows that from cohorts 76 to 84, out of 3855 who enrolled in the programs, 3268 graduated, producing a graduation rate of 85% (Don Bosco TVET Center, 2016). The employment rate of 101% contrasts with the employment rate of 77% for those who have a post-secondary vocational education in OECD countries, or 80% for those who have a tertiary education (OECD, 2015). Don Bosco's employment rate also contrasts with the findings of the McKinsey (2012) study, which showed that, of youth aged 15 to 29 years, only 38% were employed full time. The employment rate of more than a 100% for Don Bosco shows why it is a high-performing school in the field of TVET.

Table 1

Employability of Don Bosco TVET Graduates for the Sys 2011-12 to 15-16 (Don Bosco TVET Center, 2016)

Cohort	Enrolled	Graduated	Assessed	Certified	Employed	% Employed:	% Assessed:	%Certified: Assessed
84	424	337	313	313	328	97%	93%	100%
83	532	459	366	366	459	100%	80%	100%
82	380	319	na	na	319	100%	na	na
81	504	431	na	na	462	107%	na	na
80	306	267	na	na	267	100%	na	na
79	580	488	na	na	488	100%	na	na
78	352	291	na	na	291	100%	na	na
77	490	433	na	na	433	100%	na	na
76	287	243	na	na	243	100%	na	na
Total	3855	3268	679	679	3290	101%		

The students of Don Bosco graduate from five programs: automobile mechanic, automotive service mechatronics, fitter-machinist, electro-mechanical technician, refrigeration and air-conditioning mechanic, and printing press operator. All graduates go through an assessment and certification process that is required and regulated by the government. Don

Bosco also tracks whether its graduates took the assessment and whether they earned their certifications (Table 1). Although started only in cohort 83, data for cohorts 83 and 84 show that, out of 796 who graduated, 679 were assessed and got their certifications. Thus, 85% of its graduates took the assessments, and, of those who took the assessments, 100% were certified (Don Bosco TVET Center, 2016). For these cohorts though, 787 or 98% of its graduates were employed, meaning that, even without a certification, some graduates were able to gain employment.

Description of Stakeholder Groups

The stakeholder groups are the administration, the students, the industry partners, and the faculty. The administration ensures that the Center has the organization and the resources it needs to implement the different programs and the industry partners who will support the programs. The administration also ensures the school has qualified faculty who will teach the programs and prepare students with the competencies they need to be employed whether locally or abroad.

The administration is composed of the technical director as the head of the Center, to whom the external relations officer, the assistant director, and the spiritual moderator report. The external relations officer is responsible for placement and scholarships, while the assistant director is responsible for instruction, student activities, and training facilities. The spiritual moderator ensures that Christian values are developed among the students and is also responsible for student guidance (Don Bosco TVET Center, 2016). The technical director himself seeks new industry partnerships and ensures that the needs of industry partners are provided.

There are currently 112 industry partners, which includes large and reputable companies in the automotive industry such as Toyota, Hyundai, Mitsubishi, and Subaru. There are other firms in other industries such as air-conditioning, electronics, metal fabrication, manufacturing,

and services. There are also 42 industry scholarship benefactors (Don Bosco TVET Center, 2016). These industry partners and patrons provide varied assistance in the form of on-the-job training or apprenticeships, equipment and facilities support, scholarships, curriculum design, and job placement opportunities.

The students are recruited mostly from the out-of-school youth and the underprivileged. Most of them are able to study because of the scholarships and financial assistance provided by industry partners, while some can pay for their tuition. Most of the students are male, while five percent are female. Students come from different regions in the country, although almost three-fourths are from Metro Manila (43%) and the nearby Southern Tagalog region (30%) (Don Bosco TVET Center, 2016). Students have to be graduates of at least high school and are chosen from many applicants from around the country.

There are currently 34 faculty, 12 of whom are undergraduates, 21 have a bachelor's degree, and one has a master's degree. Because the Center teaches skills, having a master's degree or higher is not essential. However, what is required is that teachers are certified for the skills they are teaching. There are 27 teachers with a national certificate (NC) level II (NC II), 25 with a national certificate level III (NC III), and six with a certificate level IV (NC IV) (Don Bosco TVET Center, 2016). Some of these teachers have two or more of the certification levels. Six of the faculty are registered assessors for the programs.

Table 2

Organizational Mission, Goal, Stakeholder Competencies, and Performance Goals

Organizational Mission		
To educate and evangelize the youth through a curriculum with a technological orientation that promotes Gospel values, thereby producing good Christians and upright citizens.		
Organizational Goal		
In 2015-16, Don Bosco Technical Vocational Education and Training Center achieved an employment rate of 100% among its graduates six months after graduation		
Administration	**Students**	**Industry**
Proficiencies/Competencies Necessary to Reach the Organization's goal	Proficiencies/Competencies Necessary to Reach the Organization's goal	Proficiencies/Competencies Necessary to Reach the Organization's goal
Establishment and expansion of industry partnerships for curriculum and instructional support, apprenticeships, and job placements	All students acquire the technical skills required in the curriculum All students learn Gospel-based Christian values	Industry has a basic understanding of pedagogy and instruction Industry designs curriculum together with academe to produce the skills it requires of the graduates
Administration Goals	**Students Goals**	**Industry Goals**
The administration establishes and nurtures 100 industry partners who actively collaborate with the school in producing graduates who possess skills that are relevant to the needs of industry	100% of the students demonstrate mastery of all competencies in the curriculum by the end of their program	All industry partners engage in the training of the students by contributing equipment and scholarships, and participating in curriculum design.

Stakeholder Group for the Study

Among the stakeholders mentioned, this study focused on the administration because this stakeholder group is critical to the success of the organization as it fulfills its mission of providing technical training to out-of-school and underprivileged youth so that they may gain employment and be productive members of the society. To fulfill this mission, it is crucial that the administration secures industry partners with industry who are actively engaged with the school in designing and delivering training programs that produce graduates with the relevant skills needed by industry. The administration secured partnership agreements with 112 industry partners, and 42 industry scholarship benefactors, who are critical as the Center continues to fulfill its mission.

Purpose of the Project and Questions

The goal of the project was to investigate what has allowed Don Bosco TVET Center to address the problem of unemployment adequately. Don Bosco achieved 100% employability of its graduates over the past five years, an exceptional employability rate that makes it an exemplary practice in TVET. The question that this study answered was, in a world where unemployment is a persistent problem, what has Don Bosco done to produce such an exceptional employability rate? As the partnerships with industry are crucial in delivering relevant training programs that produce a 100% employability rate, this study specifically looked into the knowledge, motivational, and organizational influences that allowed the administration to achieve its goal of securing and establishing partnerships with the industry.

Clark and Estes (2008) contend that there are three top causes of performance gaps, or performance achievement: the knowledge of the people in the organization, their motivation to

achieve the goal, and the organizational policies and processes that hinder or facilitate achievement of the goal. This study specifically investigated two questions:

1. What knowledge, motivational, and organizational assets does the administration have that allowed it to achieve its stakeholder goal of securing and developing over 100 partnerships with industry, which has been essential to the achievement of the organization's overall goal of employability?
2. What knowledge, motivational, and organizational assets may be developed by other schools seeking to establish or expand its own technical-vocational programs?

Conceptual and Methodological Framework

The conceptual framework used for this study was the Gap Analysis framework of Clark and Estes (2008). The framework analyzed organizational performance by identifying where an organization is relative to its stated goals. A gap occurs when the organization's actual performance is short of its goals, and this gap can be quantified by measuring how far the actual results are from the desired results. Goals, however, have to be clearly defined as the goals establish the standards by which an organization's performance is measured. The goals may be defined at three levels: 1.) long-term or what may be called as the global goals; 2.) intermediate goals or subsidiary goals which will lead into the long-term goals; and 3.) the day-to-day or performance goals (Rueda, 2011). Having established the gaps, causes are assumed and investigated. Causes fall into one of three broad categories: knowledge, motivation, or organization (KMO) (Clark & Estes, 2008).

In this study, however, the gap analysis framework was used to evaluate Don Bosco TVET center from the point of view of a promising practice. Don Bosco achieved its global goal of employability of its graduates, therefore the gap analysis was used in the reverse. Instead of

gaps, what was identified are the performance areas where Don Bosco has actually met, or surpassed its goals. The assumed knowledge, motivational, and organizational influences, or assets in a promising practice study, that allowed Don Bosco to surpass its goals were identified and investigated.

Organization of the Project

This study is organized into five chapters. Chapter One introduced the problem of practice, the organization being investigated as a promising practice, the stakeholder groups, and the stakeholder of focus. Chapter Two reviews literature on TVET education and partnerships, investigated the problem of practice of unemployment and skills shortage, and explored how TVET education helps address this problem of practice. It looked into stakeholder knowledge, motivation, and organizational influences that addressed employability of graduates. Chapter Three discusses the methodology of validating the assumed knowledge, motivation, and organizational influences, and how the qualitative studies were conducted. Chapter Four discusses the findings and results from the investigation, supported by the literature. Chapter Five identifies the key factors that have made the Center effective in dealing with the problem of practice, and provided recommendations for other schools wanting to establish or expand its TVET programs.

CHAPTER TWO: REVIEW OF THE LITERATURE

This chapter examines current trends in unemployment and underemployment in the world, narrowing down to Asia-Pacific and then the Philippines. It also looks at unemployment among youth as well as the parallel problem of skills shortages and mismatches. It then explores how education addresses the problem of unemployment, and, in particular, how technical and vocational education simultaneously helps to solve the problems of unemployment and skills shortages. The chapter concludes with a discussion of the knowledge, motivation and organizational influences that are necessary for the administration to be effective in creating effective partnerships with industry.

Global Unemployment and Underemployment

Unemployment is a persistent problem. In 2016, global unemployment was at 5.7 % with 198 million people unemployed (ILO, 2017). The unemployment rate is expected to rise slightly in 2017 to 5.8%, and remain at that level in 2018. The unemployment rates translate to a total number of unemployed people of 201 million in 2017 and 203 million in 2018 in the world (ILO, 2017).

The increase in unemployment is due to the increase in the total labor force outstripping the growth in jobs (Marope, Chakroun, & Holmes, 2015). The economic crisis of 2008 slowed the ability of many countries to create new jobs, while, at the same time, the population of 15- to 24-year-olds increased. By 2010, the population of 15- to 24-year-olds worldwide reached over 1 billion, and maintaining the ratio of employment to the working-age population will require 600 million more jobs by 2020 (Marope et al., 2015).

Unemployment is highest in emerging countries (categorized by the ILO as middle-income countries), with 143 million unemployed in 2016, which is expected to further increase

to 149 million in 2018 (ILO, 2017). The unemployed in emerging countries comprise 73% of the world's unemployed. In contrast, there are 38 million unemployed people in developed countries (countries categorized by the ILO as high-income countries) and 16 million unemployed in developing countries (countries classified by the ILO as low-income countries), which comprise 19% and 8%, respectively, of the total unemployed (ILO, 2017).

Unemployment in Asia-Pacific

Unemployment in Asia-Pacific is lower than global unemployment. Unemployment in Asia-Pacific in 2016 was 4.2% and is expected to remain steady in 2017 and increase slightly to 4.3% in 2018. Lower unemployment rates in Asia-Pacific were mainly due to the economic growth in the region, which was at high of 8% to 9% in previous years but has slowed to 5.1% in 2016 and was estimated to be at 5% in 2017 (ILO, 2017; OECD, 2014).

However, the quality and quantity of employment in the Asia-Pacific region need to be addressed. While unemployment rates are lower than global unemployment rates, Asia-Pacific accounts for 84.4 million, or about 40% of the world's unemployed. It also has 960 million people in vulnerable employment— defined as those own-account workers or contributing family workers who have limited access to social protection schemes (ILO, 2017). The number of workers in vulnerable employment comprises 50.1% of those employed. Lastly, Asia-Pacific comprises 63.5% of the world’s working poor, defined as those living with less than US$3.10 per day. This percentage is equivalent to 500 million workers living in poverty (ILO, 2017).

Youth Unemployment Globally

The unemployment rate among youth (aged 15 to 24) is more than twice as high as adult unemployment, and, in some countries, it is four times higher , so efforts to reduce unemployment must focus on the youth (ILO, 2016; Mourshed et al., 2012; OECD, 2015,

2016c). Youth unemployment was at 12.9% in 2015 and is expected to hit 13.1% in 2016 and 2017. The youth unemployment rate is more than twice the total unemployment rate of 5.7% in 2016 and 5.8% in 2017 (ILO, 2016). The youth unemployment rates translate to 70.5 million unemployed youths in 2015 and 71 million in 2016 and 2017.

According to the ILO (2016), the unemployment rate is highest in developed countries in 2015 at 15%, followed by emerging economies at 13.3%, and then developing countries at 9.4 %. However, the number of unemployed youth is greatest among emerging countries, which accounted for 52.9 million of the world's unemployed youth, or 75%. The number of unemployed young people in developed countries was 10.2 million, or 14.5% of the world's unemployed youth and, in developing countries, was 7.4 million, or 10.5%. The total number of unemployed youth accounts for 35% of the world's unemployed, despite the youth representing just 15% of the world's labor force (ILO, 2016).

According to the ILO (2016), compounding the problem in developing and emerging countries is the fact that, of all the youth who were employed, 38.4% lived in poverty on less than US$ 3.10 per day. The number of young people living in poverty is worse in developing countries, with 73% of those employed living in poverty. These percentages translate to 160 million youth who are employed yet live in poverty, with 107 million of them in emerging countries, and 53 million in developing countries (ILO, 2016).

Youth Unemployment in Asia-Pacific

Youth unemployment in Southeast Asia and the Pacific was 12.4% in 2015 and is expected to rise slightly to 13% in 2016, and 13.6% in 2017. These percentages are equivalent to 7.4 million youth unemployed in 2015, and 8 million in 2017. The number of unemployed youth

is even higher in Indonesia, where the youth unemployment rate is above 20% (ILO, 2016; OECD, 2014).

With these levels of youth unemployment, it is crucial that young people are provided opportunities for education and skills development. According to the ILO (2016), participation in the labor force among 15- to 19-year-olds is visibly lower than among 20- to 24-year-olds (30% vs. 61%). This lack of participation is because there is an increase in enrollment in upper secondary education, which recorded gross enrollment rates of 75%. However, the number of youth who are neither employed nor in education or training (NEET) has risen, and, in a survey of 28 countries, was recorded at 25% (Biavaschi et al., 2012; Mourshed et al., 2012). The major challenge for the youth in the 20 to 29 age range is lack of decent opportunities.

Unemployment in the Philippines

Unemployment in the Philippines was 5.5%, higher than the 4.2% of the Asia-Pacific region. Selected employment and unemployment statistics in the Philippines as of 2016 are shown in Table 2. This rate was already a reduction from the 6.6% in 2014 and 6.3% in 2015 (PSA, 2017). The total unemployed was 2.4 million in 2016, out of a total of 43.2 million who were in the labor force (PSA, 2017).

Table 3

Selected Employment Statistics in the Philippines (PSA, 2017)

	2016
Household population 15 yrs old an	68125.0
Labor Force	43206.0
Employed	40837.0
Underemployed	7478.0
Visibly	4117.0
Invisibly	3361.0
Unemployed	2367.0
Labor force participation rate	63.4%
Employment rate	94.5%
Underemployment rate	18.3%
Visible underemployment rate	10.1%
Unemployment rate	5.5%

In addition to the unemployed, the PSA includes a category of workers who are underemployed, which it defines as those who desire to have additional hours of work in their present jobs or those who desire new jobs with longer hours (PSA, 2017). The number of underemployed in the Philippines was at 7.5 million in 2016, or 18% of the total workforce (PSA, 2017). More than half of the underemployed, or 4.1 million, are those the authority defines as visibly underemployed, or those who are working fewer than 40 hours a week (PSA, 2017). The visibly underemployed make up 10.1% of the total labor force.

Youth Unemployment in the Philippines

Unemployment among young people in the Philippines was 13.5% in 2016, 2.45 times more than the total unemployment rate (PSA, 2017). The unemployed youth was 1.145 million in 2016 out of the total 8.477 million young people who were in the labor force. The youth accounted for 48% of the total unemployed among the workforce (PSA, 2017).

Low Educational Attainment of Those in the Labor Force

Another problem that the Philippines faces is the low educational attainment of those in the labor force. As can be seen in Table 4, 70% of those in the workforce have high school or lower as their highest educational attainment (PSA, 2017). There is an opportunity to re-tool or upgrade the skills of those in the labor force.

Table 4

Highest Educational Achievement of Those Employed in the Philippines (PSA, 2017)

	('000s)	Percentage to total
No grade completed	573	1.4%
Elementary or some elementary	11029	27.0%
High School or some high school	16993	41.6%
Post Secondary or some post secondary	1999	4.9%
College	10243	25.1%
Undergraduate	3886	9.5%
Graduate and higher	6357	15.6%
Total	40837	100.0%

The challenge for governments and educators around the world is to provide education and skills training that would open up opportunities in the labor market for the youth. The higher rates of unemployment among young people highlights the need for education and training systems to facilitate the initial transition to the workplace.

Lower Youth Unemployment in Germany

Amidst the situation of unemployment across the globe, Germany has enjoyed one of the lowest youth unemployment rates in Europe. Germany's youth unemployment rate was 7.5% in 2013, a decline from 11.2% in 2009. Furthermore, a statistical analysis of OECD countries shows that countries implementing the dual system of vocational education and training have, on

average, 4.7% lower unemployment rates among youth than countries implementing the schooling model of vocational education and training (Hummelsheim & Baur, 2014).

The German dual system is a high-performing model of vocational education and training as recognized by multilateral institutions such as ILO, World Bank, OECD, and UNESCO (Hummelsheim & Baur, 2014). There are five key elements to the German dual system that make it able to address unemployment: (1) the close cooperation between the state and the private sector, (2) on-the-job learning, (3) societal acceptance of standards, (4) training of vocational trainers, and (5) institutionalized research and career guidance. Central to the success of the German dual system of VET is the widespread involvement of enterprises. In 2011, 455,000 companies were involved in training 1.46 million apprentices in 344 training occupations (Hummelsheim & Baur, 2014).

Skills Mismatches and Shortages

While unemployment rates continue to rise across the globe, there is another dimension to the problem of unemployment - the mismatch of skills. Paradoxically, while workers complain of a lack of job opportunities, employers also complain about the shortage of skilled labor (Mourshed et al., 2012; OECD, 2015).

Causes of Skills Mismatches

Skills mismatches are brought about by technological innovation, globalization, demographic changes, and migration (Marope et al., 2015):

- Technological innovation cycles are getting shorter, and the rapid changes in technology make current skills obsolete, while also creating new skill requirements (OECD, 2016d).
- Globalization has opened up the fragmentation of value chains and the relocation of some tasks within the value chain to other countries. While the first wave of offshoring

involved transferring low-value low-skilled work such as in garment manufacturing, the current wave of offshoring includes high-value, high-skilled work such as back-office operations. Globalization has profoundly changed the nature of skills requirements of industry (Marope et al., 2015; Wang, 2012).

- Demographic changes are also affecting skills on the supply side. Demographic data show a greater proportion of the population between the ages 0 to 29 in less developed countries and a higher proportion of the population aged 30 above in advanced countries. These demographic differences clearly affect the profile of the skills supply in these countries (Marope et al., 2015; Tabbron & Yang, 1997).
- Migration patterns show that there is net negative migration flows in regions such as Asia, Africa, and Latin America, and the Caribbean, while there is net positive migration flows in North America and Europe. The skills supply changes as migration patterns evolve (European Center for the Development of Vocational Training [CEDEFOP], 2016a; OECD, 2016d).

Evidence of Skills Mismatch

Skills mismatches are evident in many countries around the world. There were two million vacancies reported in the European Union countries in 2013, and four out of ten employers reported having difficulties looking for employees with the right skills (Mourshed et al., 2012; OECD, 2015).

In the report by OECD, *Assessing and Anticipating Changing Skill Needs* (OECD, 2016), the OECD published the following evidence of skills mismatches:

- Forty-five percent of workers reported experiencing skills mismatch. These workers said they lack skills in their current jobs, and some workers stated that they have skills to accomplish more complex tasks.
- Data from the European Labor Force survey showed that across the European Union countries, 23% of workers experienced qualifications mismatch. That is, they felt that their education was higher than that required by the job.
- The OECD conducted a survey of adult skills in 2012 and found out that 60% of the workers were mismatched- either they were in a different field from what they studied, or their educational qualification did not fit the job, or they had skills that did not match the requirements of the job.
- In 2013, around 40% of employers in Europe reported finding difficulties in finding workers with the right skills.
- In a survey of more than 40 European and non-European countries, 36% of employers said they had difficulty filling vacancies.

Skills Mismatches and Shortages in the Philippines

The Department of Labor and Employment conducted a survey in 2008 of occupational and skills shortages and found that skill shortages were already evident (BLES, 2008). In the survey conducted among 667 firms of the top 5000 corporations of the Philippines based in Metro Manila, 57% said they had job vacancies, and four out five of these firms said the vacancies were hard to fill. In the service sector, 63% said they had vacancies, and 79% of those who had vacancies stated that they were hard to fill. Among firms surveyed in the industry, 43% of the companies said they had vacancies, and 82% of those who had vacancies stated that they were hard to fill. Among firms in agriculture and fisheries, 58% said they had vacancies, and

57% of those who had vacancies said they were hard to fill (BLES, 2008). The positions which were hard to fill were for managers and supervisors (23%), professionals (24%), and technical and associate professionals. The top reasons cited as to why these positions were hard to fill were lack of the right competencies (45%) and lack of work experience (21%) (BLES, 2008).

However, there were also positions that were easy to fill, meaning there were more qualified applicants than vacancies for the posts. Of the firms in the service sector who had vacancies, 60% said they had positions which were easy to fill while, in the industry sector, 58% said they had positions which were easy to fill. The positions which were easy to fill were for skilled workers such as receptionists and information clerks, drivers, debt collectors, cooks, and administrative secretaries (BLES, 2008).

The Technical Education and Skills Development Authority (TESDA) in 2013 conducted a skills demand mapping survey to determine the skills requirements of the industry. It found that, despite the 2.3 million unemployed in the Philippines, there was a projected need for 1.7 million new jobs during the period 2014 to 2016 (TESDA, 2015). The highest demand for jobs was in the information technology and business processing sector (727,000 new jobs), followed by infrastructure and construction (246,000 new jobs), tourism (207,000), and the agri-business sector (150,000) (Tesda, 2015).

Education's Role in Reducing Unemployment

Level of education is a significant determinant to the employability of the person. In OECD countries, those who finished with below upper secondary education only had a 1 in 2 employment rate (56%). Those with an upper secondary or post-secondary non-tertiary education had a 74% employment rate, and those with a tertiary education had an 83% employment rate (CEDEFOP, 2013; OECD, 2015).

Earnings Based on Educational Attainment

The higher the education, the higher the relative earnings. In OECD countries in 2013, using those with upper secondary qualifications as the base, adults without upper secondary qualifications earn about 20% less, those with post-secondary non-tertiary education earn about 10% more, and those with a tertiary degree earn about 60% more (OECD, 2015). Comparing the earnings of workers over a lifetime, the average earnings in OECD countries of a man who has an upper secondary or post-secondary non-tertiary education is US$ 138,900, while the costs to achieve this level of education is US$ 31,100. For a woman who has an upper secondary or post-secondary non-tertiary education, the OECD average earnings over a lifetime is US$ 92,800 with a cost of education of US$ 31,100. A man with a tertiary education will have earnings over a lifetime of US$ 288,600 more than a person who attained an upper secondary or post-secondary education, while the costs to achieve this level of education is US$ 56,700 more. For a woman, the equivalent figures are US$ 208,300 and $US 57,200 respectively (OECD, 2015).

In the United States in 2011, the median earnings of full-time workers aged 25 years and older and with less than a high school diploma was US$ 25,100. These earnings compare with the earnings of an individual with a high school diploma of US$ 35,400 and those of a person with some college of US$ 40,400. A person with an associate's degree earns US$ 44,800, and an employee with a bachelor's degree earns US$ 56,500 (Baum et al., 2013). Regarding full-time lifetime earnings, and with earnings of those with a high school diploma as a base, those with some college earn 1.13 times more, those with an associate's degree earn 1.27 times, and those with a bachelor's degree earn 1.65 times more (Baum et al., 2013).

The Role of Technical and Vocational Education and Training

Technological and demographic changes highlight the role of TVET in reducing unemployment (Billett, 2009; Marope et al., 2015). Firstly, vocational education is perfectly situated to address the problem of skills mismatch because of its close interactions with industry (Wang, 2012). Secondly, technical and vocational education is ideal in a workplace environment where technological advances and innovation cycles are getting shorter, and skills needs of the industry are changing faster (Tabbron & Yang, 1997). Lastly, TVET is well-suited for the demographic changes that are happening. In developing economies, where there is a growing youthful population, TVET can provide the training that enables the transition into work. In the advanced economies, where there is a growing elderly population, TVET can provide the skills required for re-tooling (Marope et al., 2015).

TVET can play a significant role in providing employment opportunities to those who can complete lower secondary or upper secondary schooling but are not able to proceed to tertiary or college studies due to the lack of financial resources. In the Philippines, this accounts for about 40% of the students coming out of the public high school system, estimated to be a little over half a million students a year (Syjuco, 2012). These are the students who end up as unemployed, out-of-school, or underemployed if not provided with opportunities for better education. In most instances, and as shown by the earnings data in the previous section, tertiary education offers significant gains and better jobs than those who complete upper secondary or post-secondary non-tertiary studies. However, where higher education is not an option, TVET is a viable and practical alternative to securing long-term and sustainable employment.

TVET is recognized for its role in increasing educational attainment levels and providing better career outcomes for the poor. UNESCO has emphasized the role vocational education and

training plays in economic development and poverty reduction. It recognizes that TVET can provide the knowledge and skills needed to avail of opportunities in the labor market, especially to the most disadvantaged. TVET can bridge the gap between the wealthy and the poor, and between those who are excluded from the benefits of education and those who are traditionally able to access education (Lamb, 2011).

The promise of TVET is that is the main alternative to academic study, and it has the potential to reach a greater number of the population and to access a wider range of groups (Marope et al., 2015). It can extend education to the disadvantaged and to those who are in the low-income groups (Marope et al., 2015). TVET has the potential to provide education and training to all and to contribute to human capital formation for the greater segment of the population who have historically been excluded from the benefits of better qualifications (Lamb, 2011).

The benefits of TVET may extend not only to those who are unemployed but even more to those who are employed but have lesser qualifications. In the Philippines, out of the 40 million who are in the labor force, 11 million have finished elementary or lower, and 17 million finished high school or some high school (PSA, 2017). The number of employed who finished high school or lower is 28 million, which is more than half of the 40 million in the labor force. These workers stand to benefit from better employment opportunities if given a chance to enroll in TVET.

Return on Investment in TVET

If TVET can provide opportunities to those who are unable to continue with tertiary studies, the benefit of TVET is that it provides better earnings over someone who finished lower secondary or upper secondary schooling only (OECD, 2015). Aside from better earnings, TVET

can also provide a more stable employment and a lower risk of having periods of unemployment (Lamb, 2011). Other benefits may be improved health and lower incarceration rates (Long & Shah, 2008). The costs of a TVET education, on the other hand, are the fees that one needs to pay to complete a TVET program and the foregone opportunities during the period of study, or the opportunity costs (Long & Shah, 2008).

In a study on private returns to vocational education and training (Long & Shah, 2008), the authors calculated the internal rate of return of the costs and benefits of a vocational education. The authors estimated the additional income that a person may earn from a vocational education during the person's working years, versus the costs necessary to secure that education. It discounted these income and expenses flows and using the internal rate of return method, calculated the returns from a vocational education. The authors estimated that the returns could vary from 15% to 50%, depending on whether the comparison is to a student who has finished grade 10 or grade 12 only or depending on whether the TVET education provides lower or higher qualifications (Long & Shah, 2008). However, regardless of the scenario, the calculation shows that the returns are desirable, and the investment in TVET pays off.

Technical and Vocational Education and Training in the Philippines

Governance

Technical and vocational education and training centers are supervised and regulated by the government through the TESDA. The TESDA was established in 1994 through the enactment of the Technical Education and Skills Development Act. This act sought to mobilize the resources of labor, industry, government, and technical vocational institutions towards the development of the skills of the country's human resources. It centralized all programs and efforts towards skills development previously under the Department of Labor and the

Department of Education into one unit. The TESDA Act resulted from the recommendations of a congressional commission formed in 1993 by then President Fidel V. Ramos, which undertook a review of the state of the country's education and skills development (TESDA website).

Modes of Delivery of TVET

TVET is provided mainly through any one of three modes of delivery: (1) institution-based, (2) enterprise-based, and (3) community-based programs. Institution-based programs are formal programs operated by private and public schools, colleges, institutes and some regional centers administered by TESDA (Philippine Chamber of Commerce and Industry, 2016). Enterprise-based programs are either apprenticeship, learnership, or dual-training programs offered by some private companies and enterprises which are registered with the TESDA. Dual-training programs are done only in partnership with a duly-accredited school. Community-based programs are informal training programs offered by non-government agencies or local government units. In 2014, there were 2 million students enrolled in TVET programs, half of whom were enrolled in institution-based programs, another 46% of who were enrolled in community-based programs, and 4% were enrolled in enterprise-based programs (Orbeta & Esguerra, 2016; TESDA, 2014, 2016) .

TVET institutions are classified by type: private and public. In 2013, private schools comprised the bulk of TVET institutions as these accounted for 4266, or 90% of the total TVET institutions. Public accounted for only 467, or 10%, of the total number of institutions. The number of private institutions grew through the years, as these were only 1,876 in 2001. The number of public institutions, on the other hand, declined from 1,220 in 2001. The increasing number of private schools reflects a growing interest in the private sector in TVET programs (TESDA, 2014).

Enrollment in TVET

There were 2.2 million students enrolled in vocational programs in 2016, which increased from 575,000 in 2001 (TESDA, 2016a). This growth in enrollment is an increase of almost 300% in 15 years or an average annual growth of 20% over the period. This increase reflects a growing interest in technical vocational programs in the country. The enrollment in technical vocational programs is about one-half of the 4.1 million enrolled in tertiary programs in 2015-16. This enrollment indicates the significance of technical vocational programs in the education and development of the country's workforce.

The choice of programs of TVET graduates in 2012 reflected the growing sectors of the economy. The highest number of graduates enrolled in information and communications technology courses (27%), followed by tourism and related programs (24%), followed by health and social services programs (12%) (Orbeta & Esguerra, 2016; TESDA, 2014, 2016b). The rest of those enrolled were spread out across several other programs in smaller numbers.

Vocational training is seen as a post-secondary course, with about 50% of graduates of TVET programs in 2012 having completed secondary schooling at the time of enrollment, 19% completed some tertiary, while 13% completed tertiary (Orbeta & Esguerra, 2016). Various reasons were provided by the graduates for taking a vocational program, but the most mentioned were for employment, 45%, to gain skills, 38%, and for skills upgrading, 7% (Orbeta & Esguerra, 2016; TESDA, 2013)

Employability of TVET Graduates

TESDA conducted an impact evaluation study in 2013 to determine the effectiveness of vocational programs in the Philippines, specifically regarding the employability of its graduates. The study was conducted among 2012 graduates of various programs in technical vocational

institutions nationwide. It utilized a sample size of 16,283 respondents representing 788,439 graduates for a 95% confidence level and a +/- 3% margin of error (TESDA, 2013).

The study found that, out of the graduates of technical vocational programs in 2012, 67.5% were employed. The highest employment rate was among vocational graduates who had a college degree before the vocational study (81%), followed by those who had a high school diploma (67%), followed by those who had some college (65%). This employability rate increased from the previous years: 62% in the 2012 study, 61% in the 2011 study, and 55% in the 2008 study (TESDA, 2013). Of those who were employed, 63% worked in private establishments, 10% in government, 9.6% in private households, and 7.4% were self-employed (TESDA, 2013).

These statistics show that TVET programs provide opportunities for employment for most of its graduates and that the employability rate increased over the years. However, there is still much to be desired regarding the employability of TVET graduates if it is to have a meaningful impact on the human resources development of the country.

The K-12 Program

The Philippines launched what is probably one of the most comprehensive reforms to its basic education system by expanding the basic education cycle from 10 years to 12 years. This reform was one of the commitments made by the country to the Education for All (EFA) initiative launched in the international community. This reform mandated the offering of Kindergarten and added two more years to high school. However, beyond the lengthening of the cycle, the reform also enhanced and decongested the previous K-10 curriculum to allow learners to master basic competencies. This reform also brought the Philippines up to par with other

countries, as it was one of the remaining few countries that still had a K-10 basic education cycle (Southeast Asian Ministers of Education Organization, 2012).

The addition of the two years in high school, also called the senior high school, allowed students to choose from one of four tracks: the academic track, the technical and vocational livelihood track, the arts track, and the sports track. Those who wanted to pursue a degree in college chose the academic track, and those who wanted to find employment after high school chose the technical and vocational track. The offering of the technical and vocational track in senior high school opened up the technical-vocational programs to more enrollees, as the technical and vocational track allowed students to enroll in the same programs of TESDA. In the first year of implementation of the senior high school program, around 40% of 1.5 million senior high school students, or 600,000 students, chose the technical-vocational track (Department of Education, 2017).

Quality Assurance

Given that 90% of technical vocational training institutions are private, it is necessary that the TESDA implement quality control mechanisms to ensure that the provision of training is according to standards. Towards this end, the TESDA requires that all programs offered for the public are registered with the TESDA and are issued a certificate of program registration (CoPR). The CoPR is obtained only after a training institution has provided enough evidence that it has complied with the minimum requirements specified in the training regulations issued by TESDA. The training regulations define guidelines on instruction, administration, faculty, and facilities for most of the programs offered. TESDA has issued 241 training regulations, out of which 77% or 186 are utilized by training providers. There is a total of 18,477 registered programs that

follow the training regulations, but there are also some 2,313 registered programs not covered by any training regulations (TESDA, 2014).

As a way of controlling the quality of graduates, the TESDA administers competency assessments to everyone who graduates from technical-vocational programs and issues national certifications (NCs) to those who can pass the assessment. Students are not issued a certification unless they pass the assessments. In 2012, out of the total 788,000 who graduated, 367,000, or 46.5% took the competency assessments. Out of those who took the competency assessments, 92% passed (TESDA, 2014).

The Philippine Qualifications Reference Framework

The Philippine Qualifications Reference Framework (PQRF) was institutionalized through Executive Order No 83, Series of 2012, signed by then President Benigno Aquino (TESDA, 2012a). The PQRF was established to adopt national standards and levels for outcomes of education. Eight levels of outcomes were identified, with each level having specific descriptors of the knowledge, skills, and values; and the application of those knowledge, skills, and values. The degree of independence of each level is also defined (TESDA, 2012a). The PQRF allows for mobility between technical and vocational education and higher education, and when benchmarked against qualifications frameworks of other countries, allows for international mobility of workers and professionals across nations. Vocational programs provide Level I to Level V qualifications, a baccalaureate degree provides Level VI, a post-baccalaureate level VII, and a doctorate or post-doctorate the highest at level VIII (TESDA, 2012b).

The Role of School-Industry Partnerships in TVET

School-industry partnerships can address the skills gaps and mismatches that are prevalent around the world. School-industry partnerships ensure that the skills taught in school

are aligned to the needs of the labor market (UNESCO- UNEVOC, 2015). Industry partners assist in identifying the skills and competencies that are relevant to the job market, formulating a curriculum that addresses these skills, and teaching the curriculum in a way that ensures students learn the skills according to the standards set by both schools and industry (Mourshed et al., 2012). School-industry partnerships are successful when there is an intensive collaboration between the parties, and when both sides define their requirements at a very detailed level (Mourshed et al., 2012).

Addressing Skills Gaps and Mismatches

Partnerships between schools and industry can close the skills gap because they facilitate the transition from school to work, and connects learning with the workplace more effectively (Fazio, Fernandez-Coto, & Ripani, 2016; Mourshed et al., 2012). School-industry partnerships allow TVET to provide general skills, occupation-specific skills, and workplace-specific skills that are directly linked to the employer's needs leading to productive and sustainable employment (Biavaschi et al., 2012; Billett, 2009).

Outcomes Orientation

The outcome orientation of TVET necessarily draws in the participation of industry. Since the outcomes refer to the application of learning to the actual workplace (Gessler & Moreno, 2015), industry defines the desired outcomes and evaluates whether the outputs of the training provider are up to industry standards or not. There are four stages in the learning process: input, process, output, and outcomes. The desired outcomes, the fourth stage of the learning process feed into the design of the first three stages of the learning process in what is called the vocational didactics (Gessler & Moreno, 2015). The input refers to the personnel, material, conceptual and environmental resources. Process applies to the delivery of learning,

and output refers to the intended learning objectives and the actual learning achievements. The industry knows the outcomes, and so, therefore, TVET providers need to work in close collaboration with industry for the relevant outcomes to be identified (Gessler & Moreno, 2015).

Providing Benefits to Stakeholders

Partnerships generate benefits to the students, to teachers, to the schools, and to businesses (Johanson & Bonto, 2009). Students benefit from partnerships through improved vocational outcomes and a higher employability. Teachers benefit from learning and training opportunities that come with increased exposure to businesses. Businesses benefit from better-trained recruits, professional learning opportunities for employees, and the satisfaction of seeing students grow. Schools benefit from partnerships through additional income streams, better training for its students, the potential to increase enrollment, and financial support provided by industry (Lonsdale et al., 2011; Polesel et.al., 2017).

Workplace Learning

School-industry partnerships are essential in providing authentic workplace learning or apprenticeships. Workplace learning provides the opportunity to reinforce learning through repeated practice, which leads to mastery of the tasks (Billett, 2009). Repeated practice is only available in sufficient quantity in workplaces, allowing the learner to develop automaticity, and permitting the individual to use their conscious thought in planning for and monitoring their activities (Mayer, 2011). Workplace learning allows the person to engage in goal-directed work activities, which reinforces and strengthens learning (Ambrose, 2010). Workplace learning provides the opportunity for learners to be taught or coached by an expert or by more experienced workers. The experts can provide guidance and modeling to reinforce learning (Billett, 2009). Lastly, workplace learning provides the physicality of the workplace itself that

may not be available in any other setting (Billett, 2009). Workplace learning can only be given if the industry is involved and opens its workplaces to learners.

Participation of Industry in the German Dual System

The high participation of industry in the German dual system of vocational training has made it one of the most efficient training systems in the world. The World Bank, OECD, ILO, and UNESCO, all acknowledge the German dual system as a high-performing model of vocational training (Hummelsheim & Baur, 2014). Data show that the average rate of youth unemployment in Germany is 7.5% in 2013, the lowest youth unemployment rate in Europe. The German dual system consists of school-based training for 1-2 days a week and workplace training for 3-4 days a week. In Germany's dual-training system in 2011, 455,000 training enterprises participated in training a total of 1.46 million apprentices in 344 recognized training occupations, involving 569,000 new training contracts. Enterprises are responsible for funding the workplace training (Hummelsheim & Baur, 2014).

Promising Practices in School-Industry Partnerships

Indian infrastructure finance company Infrastructure Leasing & Financial Services (IL&FS) is an example of a successful partnership between a TVET provider and industry (Mourshed et al., 2012). IL&FS was founded in 2007 as a for-profit venture in skills education. It operates 18 skills schools and 355 skills centers in 24 states, offering programs in 27 trades including textiles, welding, hospitality, and retail. IL&FS partnered with more than 1000 companies, securing commitments for apprenticeships and job placements for its students. IL&FS serves the poor and the youth of India and offers students a compelling proposition: enroll with IL&FS, finish the program, and a job will be waiting for them (Mourshed et al., 2012).

China Vocational Training Holdings (CVTH) is the largest training institute in China for automotive programs and is another example of a successful partnership between a school and industry (Mourshed et al., 2012). CVTH cultivates and maintains relationships with about 1,800 companies, who in turn provides workplace training and promises of employment to the trainees. CVTH maintains a comprehensive database of its partner employers and updates this on a monthly basis. Before graduation, CVTH surveys students on their ideal job placement and matches the students' preferences with the right company. In cases where the skills requirements are difficult to fill, some employers pre-hire the trainee, pays for the training and locks them in with guaranteed employment at the end of the training (Mourshed et al., 2012).

Reach is a non-government organization in Vietnam that trains young people, particularly those from low-income households in information and communications technology and the service industries (Tam, 2017). Reach has five training centers in five provinces and trains about 1,200 young people every year. Its programs include food and beverage service, beauty spa and makeup, sales and marketing, web and graphic design, hairdressing and nail art, and housekeeping. Reach has partnerships with over 1000 companies who assist in identifying the skills that are in demand, developing the curricula, and employing graduates. Reach's network with partner companies and its ability to offer relevant curricula has allowed 80% of its graduates to be employed six months after graduation (Tam, 2017).

Knowledge, Motivation, and Organizational Influences

Clark and Estes (2008) state that there are three primary causes of organizational performance: knowledge, motivation, and organization. The following section discusses what the literature says about knowledge, motivation, and organizational influences on the ability of TVET schools to secure and develop partnerships with industry.

Declarative Factual Knowledge Influences

Factual knowledge involves knowledge of terminologies, specific details and elements (Anderson & Krathwohl, 2001). The literature identifies factual knowledge areas that enhances the ability of schools to develop partnerships with industries or businesses. Schools must be able to know what the skills requirements are of industry so that its programs may be designed to address the needs of industry. Schools must know the national or regional standards for vocational programs, as these standards are also driven by, or influenced by, industry. Lastly, school administrators must know the network connections with industry and businesses that will allow them to establish partnerships with these businesses.

***Skill requirements*.** School administrators must know the skill needs of the industry to make its programs more responsive and relevant to the needs of industry. An often raised criticism from industry about the output of educational and training institutions is that the graduates of these institutions do not possess the skills that are relevant in today's workplace. Industry claims that training institutions are supply-oriented and not demand-driven and that the skills taught in school do not reflect the needs and demands of the labor market (Johanson & Bonto, 2009; Flynn, Pillay, & Watters, 2016). The OECD conducted a study of the TVET systems in the South-East Asian region in which it concluded that TVET in the area is supply-driven, and it shows little responsiveness and flexibility to the demands of the labor market (OECD, 2016a). To produce skills that are responsive to the needs of the industry, school administrators need to know updated labor market information on skills supply and demand (Gambin, Hogarth, Murphy, & Spreadbury, 2016; OECD, 2016b). This information can only be known on a consistent basis if schools worked closely with industry and businesses, as employers know best what skills they need (Johanson & Bonto, 2009; Parry & Hayden, 2015).

National and regional standards. TVET school administrators must be cognizant of standards at the national levels. Driven by the need to make TVET more responsive to the fast-changing skill requirements of the labor market, national governments around the world are putting in place quality standards to ensure quality outputs among its TVET providers (Johanson & Bonto, 2009; Veal, 2009). Because industry knows what its needs are, the formulation of quality standards is influenced by, or in some cases led by, employers. In the United Kingdom, for example, the government, through the Department of Education and the Department for Business, Innovation & Skills, together with industry, developed apprenticeship standards that aimed to make apprenticeship programs more responsive to labor market needs (National Audit Office, 2016). In Australia, the industry is at the center of efforts to formulate standards in vocational education and training, aligning learning, assessment, and workplace training systems with occupational standards (Australian Chamber, 2016).

National standards and certification systems are also being implemented to increase the quality and attractiveness of vocational qualifications (Ratnata, 2013). At the regional level, countries are coming together to form a qualifications register or framework that would allow for mutual recognition of diplomas and certificates (Paryono, 2013; Veal, 2009). Europe, for example, has a European Assurance Reference Framework for Vocational Education and Training (EQAVET) (Gatt & Faurschou, 2016), while countries in the Pacific have developed a Pacific Qualifications Register (Valmonte & Park, 2009). These regional qualifications frameworks allow for mutual recognition of diplomas and provide for mobility of workers between the countries in the region.

Networks. School administrators must have knowledge of networks and connections among businesses and industries, as these play a significant role in the formation of partnerships

between TVET providers and industry. When partnerships are formed at an institution level and not at a systemic level, opportunities for partnerships are identified at an individual level between the leaders of the school and the enterprises that comprise the partnership (Abdullah, 2013). However, mutual trust must exist between the partners for the partnership to grow and nourish. In successful partnerships between schools and industry, the strengths of the partnerships draw from the work relationships formed between the industry leaders and the faculty and school administrators (Abdullah, 2013).

Procedural Knowledge Influences

Flynn, Pillay, and Watters (2015) identified procedures that school officials and industry must know in forming partnerships. Schools and industries operate within their domains, with their own sets of objectives, culture, and policies. Going into a partnership means that each party crosses into the unfamiliar domain of the other, a process Flynn et al. calls boundary crossing. There are four mechanisms by which each can cross the other's boundary: (1) identification of partner contribution- this involves the school and industry understanding each other and what they each contribute to the partnership; (2) coordination among partners- a process by which the partners agree to interact with each other on a regular basis to facilitate boundary crossing; (3) reflection on partnership- the process of thinking about the partnership, the differences between each other's practices, and an appreciation and understanding of the other's practices; and (4) transformation among partners- this happens as each party successfully navigates the world of the other, resulting in an effective partnership.

Goals as a Motivational Influence

According to Locke and Latham (2002), goals direct effort, strengthens persistence, and leads to the discovery and use of task-relevant knowledge and strategies. Schools and industry

have a stronger commitment to the partnership when the vision for the partnership is articulated, when the objectives and purposes of the partnership are understood, and when there are exit strategies formulated for both the short and the long term (Flynn et al., 2016). The partners are more engaged when the goals for the partnership are defined, and when the goals are communicated within the school and the larger community (Abdullah, 2013; Polesel et al., 2017). Additionally, goals that include productivity and employability tend to give partnerships a long-term outlook (Polesel et al., 2017).

Shared Value as a Motivational Influence

Shared value can drive and sustain partnerships between schools and industry. Porter (2011) defines shared value as creating economic value in a way that also creates social value by addressing basic societal needs. One way in which shared value is created is by enabling local cluster development, where a cluster is a "group of firms, related businesses, suppliers, and logistical infrastructure in a particular field" (Porter, 2011, p. 12). School– industry partnerships involve the entire cluster of students, schools, faculty, school administrators, and industry. Partnerships address the basic societal need for education of the students, but at the same time create economic value for schools by way of tuition and fees, and economic value for the industry by way of a better-trained workforce and higher productivity. By working together to provide education, both industry and schools create value for their organizations, and which in turn fuels the motivation to sustain partnerships. Education is no longer the responsibility of the schools alone, as employment is no longer the responsibility of industry alone. As a Siemens executive stated: “People ask us why we invest so much to develop the skills of our people.” “I ask them instead, ‘How much is it going to cost you to not have skilled workers?’” (Mourshed et al., 2012, p. 65).

Organizational Influences

Organizational Influences include work processes, material resources, value chains, and organizational culture (Clark & Estes, 2008). Industry- school partnerships in technical and vocational education and training are also influenced by government and national organization policies, where sometimes the partnerships are initiated and formed (Hummelsheim & Baur, 2014) . Governments may also issue policies to incentivize school- industry partnerships, thereby encouraging and facilitating the formation of partnerships (Johanson & Bonto, 2009).

Government-led or sector-led partnerships. In some countries, partnerships between the schools and industries are affected by efforts or policies made by the government and by national organizations in the sector. The following examples show how school-industry partnerships are influenced by national policies:

- In Germany, 455,000 enterprises were involved in training 1.46 million apprentices under the dual-training system. This is primarily because the system is guided by legislation enacted under federal laws and school laws under the 16 Länder (Hummelsheim & Baur, 2014).
- New South Wales has a highly coordinated and centralized approach to industry partnerships. It utilizes an extensive network of work placement service providers who act as brokers who look for industry partners for the schools (Polesel et al., 2017).
- In Queensland, the government pushed for the formation of industry-school partnerships through the Gateway to Industry Schools Program. With Queensland's Department of Education and Training coordinating the effort, the program sought to link schools with global industry partners and pushed for industry participation in the formulation of the curriculum (Flynn et al., 2016).

Incentives/Subsidies. Some governments may also incentivize school-industry partnerships through subsidies, grants, tax breaks, or tax penalties. In Singapore, for example, the Skills Development Fund encourages employers to raise the qualifications of their workers by assessing a 1% levy on workers earning less than S$2,000 a month. Other incentives are training vouchers for employees of small and medium scale enterprises, a training leave scheme for older workers, and on-the-job training consultancies (Johanson & Bonto, 2009).

CHAPTER THREE: METHODOLOGY

Don Bosco Technical Vocational Education and Training Center (Don Bosco TVET Center or the Center) has an average employment rate of 100% among its graduates over the past five years. In the context of the broader problem of practice of unemployment, this may be considered an exemplary performance. What is more impressive about the Center's employability record is that its students come from low-income families who did not have the opportunity to study beyond high school if not for the scholarship offered by the Center.

The purpose of this study was to determine the knowledge, motivational, and organizational influences that enabled Don Bosco TVET Center to achieve a 100% employability rate among its graduates and adequately address the problem of unemployment. Because the Center has already achieved the highest possible goal of employability, this study determined what assets the Center acquired that allowed it to address unemployment effectively.

This study specifically investigated the ability of the stakeholder group of focus, the administration at TVET, to forge and cultivate partnerships with over 100 industry partners and about 40 scholarship benefactors. These partnerships significantly contributed to the Center's ability to achieve a 100% employability rate among its graduates.

Using the framework of Clark and Estes (2008) in analyzing organizations, as adopted by Rueda (2011) for educational institutions, this study sought to answer the following two questions:

1. What knowledge, motivational, and organizational assets does the administration have that allowed it to achieve its stakeholder goal of securing and developing over 100 partnerships with industry, which has been essential to the achievement of the organization's overall goal of employability?

2. What knowledge, motivational, and organizational assets may be developed by other schools seeking to establish or expand its own technical-vocational programs?

Stakeholders of Focus

The stakeholder of focus for this study were the administrators because of their ability to forge and cultivate partnerships with industry and non-government organizations. While the faculty, industry partners, and the students may all have contributed to the global goal of employability, the focus of this study was the intermediate goal of expanding partnerships, which is shaped and influenced by the administration.

The ability of the Center to establish partnerships with industry is central to its ability to achieve its goal of employability. The partnerships bring in scholarships and workplace training opportunities for the students, assistance in the development of curriculum, support for the build-up of training facilities, and graduates who possess the skills that match the needs of industry. It is the administration who moves and shapes the partnerships of the Center. Therefore, the stakeholder of focus is the administration with the stakeholder goal of forging and developing partnerships.

Methodological Framework

This study utilized the gap analysis framework of Clark and Estes (2008) used in organization analysis, depicted in Figure 1. Organizations should have defined goals, which serve as the yardstick for measuring current performance. The actual performance is evaluated relative to the goals, and any performance that is short of the goal represents a gap. According to Clark and Estes, all possible causes for the gaps may be grouped into three broad categories which are knowledge, motivation, and organization. The possible causes are initially assumed, and later investigated and validated. Underlying causes are acted upon, and solutions are

identified and implemented. Solutions are evaluated according to how well it can close the gap between the goal and the actual performance.

Don Bosco TVET Center surpassed its global goal of employability, as it achieved an employment rate of 100% among its graduates over the past five years. Using the Clark and Estes (2008) framework of organizational analysis, this study analyzed the Center as a promising practice, identifying the knowledge, motivational, and organizational influences that allowed Don Bosco to address the problem of unemployment adequately and successfully reach 100% employability rate among its graduates. For the stakeholder of focus, the administration, this research determined what knowledge, motivational, and organizational assets the administration has that enabled it to establish partnerships with over 100 businesses or industries, and over 40 scholarship benefactors. These partnerships are essential to the Center's ability to have a 100% employment rate among its graduates.

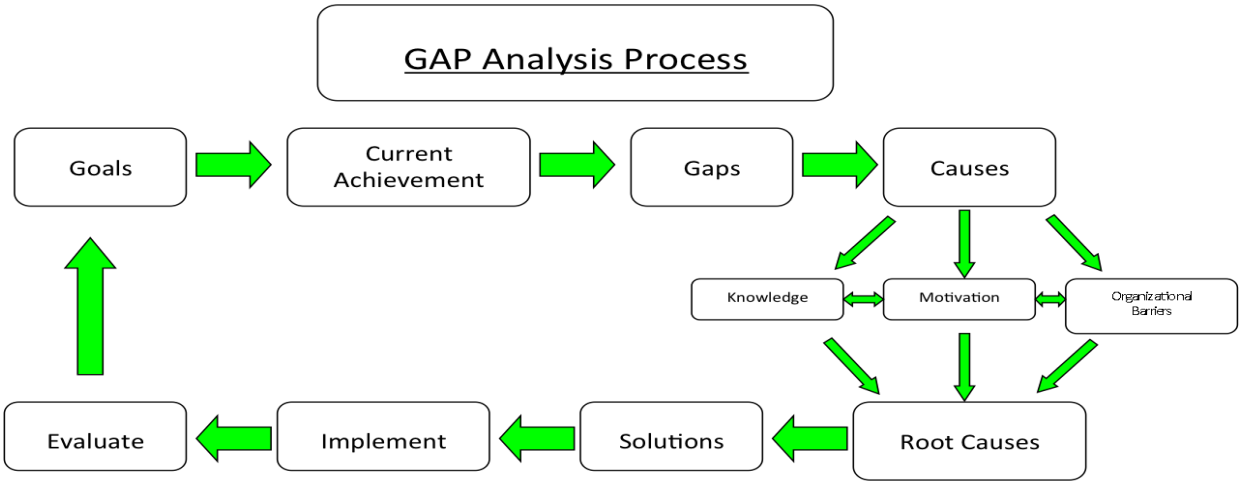

Figure 1. Gap analysis process

Assumed Influences

The previous section discussed the gap analysis process to identify performance related issues, or assets, in the case of high-performing organizations. The key steps in the gap analysis framework are: 1.) identify the assumed causes for the performance; 2.) investigate these assumed causes to determine the root, or real, causes; and finally, 3.) validate the assumed causes. However, what often happens in organizations is that decisions and actions are made based on assumed causes, without investigating and validating those assumed causes. People sometimes jump to conclusions and implement solutions based on haphazardly identified causes (Clark & Estes, 2008; Rueda, 2011). These ill-conceived solutions become very costly in the long term because, aside from spending for the implementation of those solutions, the performance problems are not addressed, and the health of the organization continues to suffer (Clark & Estes, 2008). A good rule to follow, according to Clark and Estes (2008), is the 25-75 rule: spend 25% of the time to analyze a problem, and the rest of the 75% to design and implementation.

A thorough investigation of a performance problem should include three components: scanning interviews with stakeholders; learning, motivation, and organizational theories; and a review of the literature on the particular performance problem. This chapter discusses the assumed causes of the Center's performance from initial interviews conducted with the stakeholders; from literature reviews covered in Chapter Two; and from learning, motivation, and organizational theories.

Preliminary Scanning Data and Critical Observations

An initial benchmarking visit to Don Bosco conducted sometime in August 2016 by the researcher and some members of the management team of Phinma Education revealed the

reasons why Don Bosco has a reputation in the Philippines as having the best TVET programs. In the orientation provided to the researcher's group by the director of the Center, he revealed that the Center established over 100 partnerships with businesses, industries, and non-government organizations. These partner organizations provided not only scholarships for the students, but also workplace training opportunities, which are a six-month training program conducted in the workplace of the industry partner.

The Center also worked with industry partners in the development of the curriculum so that the skills training given to the students align with the needs of the industry partners. In the researcher's tour of the school, collaboration between industry and the school was evident. The automotive training facility, for example, was set up like a modern automotive service center with the visible participation of companies like Honda, Toyota, and Porsche.

These critical observations, as well as documents provided by Don Bosco on the employability of its graduates, coupled with reviews of the literature, and learning, motivation, and organizational theories, have led to the following assumed causes of Don Bosco's success in the field of TVET. The assumed causes are categorized into the three main causes of organizational performance: knowledge, motivation, and organization.

Knowledge and Skills

Anderson and Krathwohl (2001) provide four broad types of knowledge, and these are factual, conceptual, procedural, and metacognitive knowledge. Factual knowledge involves the knowledge of essential elements of a discipline or the specifics of a subject matter and knowledge of terminologies. Conceptual knowledge is the knowledge of theories, models, and structures. Procedural knowledge is the knowledge of procedures, of how to do something.

Metacognitive knowledge is the awareness of one's own thinking or cognition (Anderson & Krathwohl, 2001). These are discussed in further detail in the following paragraphs.

Factual knowledge. Factual knowledge is the knowledge of terminology and the knowledge of specific details and elements (Anderson & Krathwohl, 2001; Mayer, 2011). The administration's factual knowledge that has allowed it to develop partnerships starts from its knowledge of businesses, industries, and non-government organizations as its networking base. The administration of Don Bosco has established contacts within these organizations. It has a set of criteria for selecting partners. It understands the current and future skills requirements of industry partners, which serve as inputs in the development of the curricula. It also knows the program standards of the government on TVET.

Conceptual knowledge. Conceptual knowledge is the knowledge of theories, models, and structures along with classifications and categories. It is the understanding of the inter-relationships of essential elements and how they fit in together into a larger structure (Anderson & Krathwohl, 2001; Mayer, 2011). The administration's conceptual knowledge is its understanding of the relationship between partnerships and employability, between joint curriculum development with industry, and the provision of industry-relevant skills to its students, between workplace training and transition into the workplace.

Procedural knowledge. Anderson and Krathwohl (2001) defined procedural knowledge as the knowledge of how to do something, of when to apply the correct procedures. The administration's procedural knowledge influences are that it knows how to establish and nurture partnerships, how to solicit support for scholarships and supervised workplace training, and how to collaborate with partners for the build-up of training equipment and building facilities. The administration at Don Bosco knows how to identify the skills requirements of industry, and how

to integrate these into its curricula. It knows how to educate and mold its students so that graduates will have the appropriate skills required by industry.

Metacognitive knowledge. Anderson and Krathwohl (2001) defined metacognitive knowledge as the knowledge of cognition, or the awareness of one's cognition. It is the strategic knowledge of being able to reflect on one's own goals and the strategies needed to get there (Anderson & Krathwohl, 2001). The administration knows how to monitor its relationships with partners, to reflect on these partnerships, and to establish goals and formulate plans to strengthen these partnerships.

Motivation

Motivation is influenced by the value that people see in the task (value), by their beliefs about their ability to accomplish the task (self-efficacy), and by how they feel about the task (mood). Motivational influences of the administration are thus categorized into value, self-efficacy, and mood (Ambrose, Bridges, DiPietro, Lovett, & Norman, 2010; Clark & Estes, 2008; Pintrich, 2003).

Value. The value of a task may be in its interest value, the skill value, or the utility value. The interest value comes from the interest one has in the task, the skill value flows from the challenge to one's unique skill that a job brings, and utility value results from the benefits that come with the achievement of a task (Clark & Estes, 2008). The administration at Don Bosco values its partnerships, the support provided by partners for scholarships and supervised workplace training. Moreover, the administration of Don Bosco values the support given by partners for the build-up of training equipment and facilities, the input given by its partners in the design of the curricula, and the hiring by its partners of its graduates for work. The partners also

value the skills of the Center's graduates because of the higher productivity that they contribute to the workplace.

Self- Efficacy. The administration believes it can secure and nurture partnerships. The administration believes it can maximize these partnerships through scholarships and supervised workplace training; it is capable of jointly developing the curriculum and training facilities with its industry partners; and that it is capable of securing job placements for its graduates.

Mood. The administration at Don Bosco feels positive about its partnerships. The administration feels positive about the inputs provided by industry to curriculum development, along with the assistance provided by industry partners for training facilities development. Furthermore, the administration at Don Bosco feels positive about the scholarships and job opportunities industry gives the students.

Organization. Performance gaps that are attributable to the organization are those that are due to the availability or lack of material resources, effective or ineffective work processes and policies, and strong or weak value streams or value chains. Organizational culture, which develops over time, may also help or hinder performance (Clark & Estes, 2008). Organizational culture is developed when a group has a shared history. Organizational culture provides structural stability, a group identity that will not be given up easily. Organizational culture also provides depth, a sense of deeply embedded beliefs and relationships, and breadth, an influence across all of a group's functions (Schein, 2004).

The administration at Don Bosco works within the standards set by the TESDA, which issues the national certifications from level I to IV, for various technical vocational programs. These standards may help or hinder the organization, depending on the application and the setting. The administration also works within the structure of the PQRF, which defines the type

of competencies for different certifications levels. This approach allows for mobility across Association of Southeast Asian Nations (ASEAN) countries and movement across education categories.

The administration also works within the Don Bosco philosophy of Salesianity and service to the poor, which guides all Don Bosco schools worldwide. Saint John Bosco started Don Bosco schools when, as a young man, he started helping the poor, out-of-school, young boys get gainful employment by giving them a technical education. This philosophy shapes the character of the TVET Center.

Population

The administration of Don Bosco's TVET Center was the population for this study. The administration is composed of the technical director, assistant technical director, external relations officer, spiritual moderator, student activities coordinator, and shop heads for the automotive (day shift), automotive (night shift), PTRCA, refrigeration and air conditioning, fitter machinist, and industrial automation programs. The technical director is the head of the Center. The assistant technical director is responsible for instruction, student activities, and training facilitates. The external relations officer is responsible for placement and scholarships. The shop heads are responsible for running the day-to-day operations of their respective programs. Additionally, the OJT assistant, the scholarship assistant, and the assessment center manager provide staff and technical support for each of their areas. There are 14 people in the administration.

The administration was selected as the population for this study because it is the group that possesses the factual, procedural, and metacognitive knowledge related to the creation and nurturing of partnerships. It is the administration that established the goal of building

partnerships, invests mental effort in pursuing the partnerships, and persists in creating and nurturing those partnerships. The administration is, therefore, the appropriate population for this study, and since they are only a few, the entire team will be the sample for this study.

Data Collection

The approval of the University of Southern California's Institutional Review Board was obtained for this research. This research was qualitative, and data was collected through individual interviews with members of the population under study; observations of training facilities, class sessions, workplace training sessions; and analysis of documents. Triangulation of the data sources was used to increase the validity and trustworthiness of the data.

Interviews and Survey

Semi-structured interviews were conducted with the 13 members of the administration, as one was unavailable due to an illness. Individual interviews were conducted in one of the rooms in the TVET Center. A room was chosen where there is privacy, with as little distraction as possible. The plan was for interviews to be conducted over two or three sessions per person, to allow for follow-up questions as the data are analyzed. However, the analysis necessitated only one follow-up interview to be conducted with the Technical Director. The interviews were conducted in both English and Filipino, as Filipinos are more comfortable talking in both languages.

The interview guide was formulated from the questions generated from each of the influences. However, questions were selected for each member of the administration, as there were questions not relevant to the position handled by one person (i.e. the scholarship assistant may not know anything about the questions on integrating industry skills into the curriculum). The interview protocol is shown in Annex A. A survey was also conducted among the members

of the administration so that questions that were common to all were asked through the survey. The survey instrument is shown as Annex B.

Observations

Observations were conducted to identify essential details about the partnerships that Don Bosco has established, details that may not otherwise be evident from the interviews and documents. However, it was essential during the observations to filter out the trivia from the relevant information. Observations were also done to triangulate the data, and to provide context to the assumed influences (Merriam, 2009).

For this study, the plan was for observations to be conducted in class and laboratory sessions to see how the required skills by industry are taught and learned by the students. The training equipment and facilities were also inspected to determine how these contribute to learning the required industry skills. The observation focused on how the relevant industry skills are taught to the students.

In the observations, the researcher was a participant, where the researcher's activities were known to the group, but the researcher's participant role was limited as an observer (Merriam, 2009). Observations were mostly recorded using field notes and photographs. The list of activities and sites that were observed are shown in Annex C.

Document Analysis

The documents analyzed were contracts, reports, publications, news reports, video recordings, government policies and standards, written testimonials, public records, and awards. Memoranda of agreements or understanding between the school and partners, scholarship agreements, and supervised workplace training agreements. The process of gathering data from documents were to identify and find relevant materials, determine authenticity and accuracy of

the documents, and code and catalog the data (Merriam, 2009). The documents that were analyzed are shown in Annex D.

Validation of Influences

The Don Bosco TVET Center is a high-performing school in the field of technical and vocational education and training because it can produce graduates with a 100% employability rate. This study investigated what assets Don Bosco TVET Center acquired to allow it to achieve such employability rate for its graduates. Specifically, it examined the assumed knowledge, motivation, and organizational influences the administration of Don Bosco has that allowed it to establish partnerships with industry and non-government associations. These assumed influences were validated through interviews with the administration, observations, and document analysis. The assumed influences and the ways by which these were validated are shown in the following tables.

Table 5

Assumed Knowledge Influences

	Interview	**Survey**	**Document Analysis**	**Observation**
Declarative Factual				
The administration knows the criteria for selecting partners	X		X	
The administration knows its networks of businesses and non-government organizations	X		X	
The administration knows the current and future skills requirements of industry	X		X	
The administration knows the program standards of government and international governing bodies	X		X	

Table5, continued

	Interview	Survey	Document Analysis	Observation
Declarative Conceptual				
The administration understands the relationship between partnerships and employability of its graduates	X		X	
The administration understands the relationship between OJT and employability of its graduates	X	X	X	
The administrations knows the relationship between integrating industry requirements into the curriculum and employability of its graduates	X	X	X	
Procedural				
The administration knows how to secure and nurture partnerships with industry and non-government organizations	X		X	X
The administration knows how to integrate the skills required by industry partners into its curriculum	X		X	X
The administration knows how to collaborate with industry in the development of training equipment and facilities			X	X
The administration knows how to conduct OJT with industry partners	X		X	X
The administration knows how to produce graduates who possess skills that matches the needs of its industry partners	X		X	

Table 5, continued

	Interview	Survey	Document Analysis	Observation
Metacognitive				
The administration knows how to formulate goals about its partnerships and develop strategies to achieve those partnerships	X		X	
The administration knows how to monitor its relationships with its partners	X		X	
The administration knows how to reflect on its relationships with partners and identify areas for improvement	X	X	X	

Table 6

Assumed Motivation Influences

	Interview	Survey	Document Analysis	Observation
Value				
The administration values the integration of industry requirements into its curriculum	X	X	X	X
The administration values collaboration with industry on the development of training equipment and facilities		X		X
The administration values scholarships provided by its partners				
The administration values OJT provided by its industry partners	X	X	X	
The administration values its ability to supply industry partners with human resources who possess the relevant skills	X			

Table 6, continued

	Interview	Survey	Document Analysis	Observation
Self-Efficacy				
The administration is confident in its ability to build its partnerships	X	X		X
The administration is confident in its ability to integrate industry requirements into its curriculum	X	X		
The administration is confident in its ability to secure support from partners for scholarships and OJT	X	X		
The administration is confident in its ability to produce graduates who have the skills needed by industry	X			
Mood				
The administration feels positive about its partnerships with industry and non-government organizations	X	X		X
The administration feels positive about the integration of industry requirements into its curriculum	X	X		X
The administration feels positive about getting support from industry for scholarships and OJT	X	X		X

Table 7

Assumed Organization Influences

	Interview	Survey	Document Analysis	Observation
Organization				
The administration has clear training standards which are consistent with national and international standards			X	
The administration aligns its programs with the Philippine Qualifications Reference Framework to allow mobility across educational systems and between ASEAN countries	X		X	X
Culture				
The administration has established a reputation for producing graduates who possess the appropriate skills required by industry	X		X	X
The administration decisions are influenced by Don Bosco's Salesian mission of helping the underserved youth gain employment through technical education	X		X	X
The administration instills work ethic among its students	X			X

Trustworthiness of Data

Merriam (2009) suggests several strategies to ensure the trustworthiness of the data as measured by the data's validity and reliability. Validity can be further broken down into internal validity, whether the findings are credible, and external validity, whether the findings are transferable to another application. Reliability answers whether the study will yield the same results if repeated. Some of the strategies Merriam suggests to ensure validity and reliability are triangulation, member checks, adequate engagement in data collection, rich and thick audit trail, and maximum variation (Merriam, 2009).

Interviews were the primary source of data, but observations and document analysis were done to triangulate the data and validate the findings from the interviews. As the data for the interviews were transcribed, coded, and analyzed, some of the findings were re-confirmed with the interviewees to check whether the information accurately described the situation. Adequate engagement in data collection was ensured by conducting the interviews over a period of six months so that interviews could be analyzed as they were completed. Follow-up questions were raised with the technical director as the data were analyzed. A qualitative data analysis software was used which could provide an audit trail and allow a review of the coded segments, if necessary.

Role of Investigator

The researcher's relationship with the Don Bosco TVET Center and its administration is as a distant third-party observer. The researcher does not occupy any position in the organization and does not have any influence over the organization. Phinma Education, in which the researcher is involved as the chief operations officer, and Don Bosco are two separate and distinct educational institutions in the country.

The first time the researcher met Fr. Dindo Vitug, the Director of the Don Bosco TVET Center, was when the researcher and some members of the management team at Phinma Education visited his school for benchmarking. The researcher and the team wanted to find out what Don Bosco was doing in its TVET Center as it already had acquired a reputation for running the best TVET programs in the Philippines. Phinma Education is interested in building up its TVET programs. A simple email to Fr. Dindo Vitug set up the visit to his school. Fr Dindo gladly received the management team of Phinma, gave them an orientation about his school, and showed them around.

The second time the researcher met Fr. Dindo Vitug was when the researcher proposed studying his organization as a promising practice study within TVET. He agreed to the proposal, and he agreed to grant access to his organization, his management team, students, teachers, and records so that the researcher could complete this research.

The researcher's role as an investigator is an independent, objective, third-party investigator whose main purpose is to understand what Don Bosco has done to achieve its status as a leading TVET provider. It is hoped that this research will contribute to the body of knowledge about TVET, informing other TVET providers on how they can improve their TVET operations.

Data Analysis

Since this is a qualitative research, the data was obtained mainly through interviews. This is a case study because it is an intensive description and analysis of a single, bounded unit (Merriam, 2009). A transcription service was used to transcribe all the audio recordings generated from the interviews. The transcripts, together with field notes from observations, notes from document analysis, documents, and reports were organized into a database for easy retrieval. The case study database was coded and analyzed to develop emerging categories and themes. A qualitative data analysis software- MAXQDA, was used to code the transcripts and manage the codes.

Limitations and Delimitations

This study has some inherent limitations that result from the way the investigation was structured, the research question, and the methodology. While the broader question of this study is what assets Don Bosco has that allows it to have 100% employability rate among its graduates, this study focused on the administration as the stakeholder group of focus and its goal of forging

and nurturing partnerships. However, the administration of the Don Bosco TVET Center is a small group of 14 members. Even as this study interviewed all except one, the sample size was only 13 people. In addition to this, not all members of the administration were involved with forming the partnerships.

There was also the aspect of the interview being conducted in both English and Filipino, as some of the interviewees were comfortable doing so. While this poses no problem to the researcher, the original meaning and intent of what was said in Filipino might be diluted in the written translation to English. There were also some limitations regarding access to some documents and sites that needed to be observed. While the administration gave consent to provide full access to the researcher to documents and sites, some industry partners were not willing to grant access where the partner is involved.

The delimitation of this study arises from the design of the study. This study is focused on the administration as the stakeholder group of focus. While other stakeholders such as the teachers, the students, and the industry partners may contribute to the ability of the Center to produce graduates with 100% employability rate, this study focused on the administration. Based on previous observations and discussions with the technical director, it seems that it is the administration that has the most influence on the employability of its graduates, hence the choice of the stakeholder group of focus. While other stakeholders may very well have an influence on these outcomes, the researcher needed to limit the focus of the study to make it more manageable within the period allotted, and within the gap analysis framework that was used.

CHAPTER FOUR: FINDINGS AND RESULTS

This chapter presents the findings and results from the interviews, surveys, document analysis, and observations that were conducted to investigate the assumed knowledge, motivational, and organizational factors that have enabled Don Bosco to achieve its goal of securing and developing over 100 partnerships. These partnerships were with various industries such as the automotive, shipping, air-conditioning, and manufacturing industries. The partnerships of Don Bosco have been essential to its overall goal of 100% employability for its graduates. The findings on the knowledge influences are first presented, categorized according to the four knowledge types- factual, conceptual, procedural, and metacognitive (Anderson & Krathwohl, 2001). The findings about the motivational influences are presented next, grouped according to the three factors that affect motivation: value, self-efficacy, and mood. Finally, the results of the organizational influences investigated are shown, and then a summary of all the validated assets are reviewed.

Participating Stakeholders

The participating stakeholders for the study were the members of the administration of the Don Bosco Technical Institute Makati, Technical Vocational Education and Training (TVET) Center. The 13 stakeholders who comprise the administration include the Technical Director, Assistant Technical Director, External Relations Officer, OJT Assistant, Scholarship Assistant, Assessment Center Manager, Student Activities Coordinator, and the Shop Heads for each of the programs- Automotive (day shift), Automotive (night shift), PTRCA, Refrigeration and Air Conditioning, Fitter Machinist, and Industrial Automation, a total of thirteen people comprised the administration. The Spiritual Moderator was not available for an interview due to an illness. The people who were directly involved in establishing and maintaining the partnerships were the

Technical Director, the External Relations Officer, and the OJT and Scholarship assistants. The Assistant Technical Director and the shop heads were mainly responsible for delivering instruction, and their involvement with the partners arose from partnership concerns about instruction.

Survey

Each of the members of the administration was invited to complete a short printed survey, and all but the Assessment Center Manager submitted the survey. The survey was designed to augment the interview so that questions that were common to all were asked through the survey. All the questions were answered by the respondents, except for one question that was left unanswered by one respondent.

Interviews

Each member of the administration was interviewed over the period from November to December 2017. The interviews were held in a visitor's room in Don Bosco Makati's TVET Center, which allowed for quiet and uninterrupted interviews. The interviews lasted from 40 minutes to an hour and a half. The interviews were conducted using a mix of Filipino and English, as some of the interviewees were more comfortable switching back and forth between the two languages. After the transcripts were completed and as the data from the interviews were being analyzed, the researcher thought it best to conduct a second interview with the Technical Director for some clarifying questions. The researcher also had an opportunity to interview the former assistant technical director who was involved in establishing industry partnerships before the time of the incumbent Technical Director.

Data Collection and Validity

The interview transcripts were coded using a qualitative data analysis (QDA) software-MAXQDA. The software allowed the researcher to systematically code each transcript and, group the codes into different themes. There were a mix of predetermined themes and emergent themes. The predetermined themes were the knowledge, motivation, and organizational influences that were the subject of this research. Emergent themes formed as they became evident from the responses. The codes were grouped and regrouped until the themes became evident. There were about 303 codes generated from fifteen interview transcripts. The distinct advantage of MAXQDA was the ability it gave to manage all these codes with ease.

The codes were color-coded into knowledge (yellow), motivational (blue), and organizational (green) factors. Figure 2 shows the distribution of the codes according to the KMO factors. Figure 3 shows the themes, the frequency with which these themes appeared in all the transcripts and each interview transcript. The MAXQDA software provided a better way of evaluating whether the ideas that emerged were relevant and mapped into some of the themes, or whether the ideas were extraneous information that did not need any further attention.

The frequency with which the themes came out in the interviews provided some measure of confidence in the data. However, to further provide validity to the findings, triangulation using multiple methods of data collection was employed (Merriam, 2009). The interview results were validated against the information gathered from 1.) survey results; 2.) documents, news articles, and publications about the partnerships of Don Bosco. The documents that were evaluated were employability reports, OJT reports, scholarship monitoring reports, list of industry partners, partnership agreements, Don Bosco TVET center profile, brochures, and pamphlets; and 3.) observation of the classrooms and laboratories.

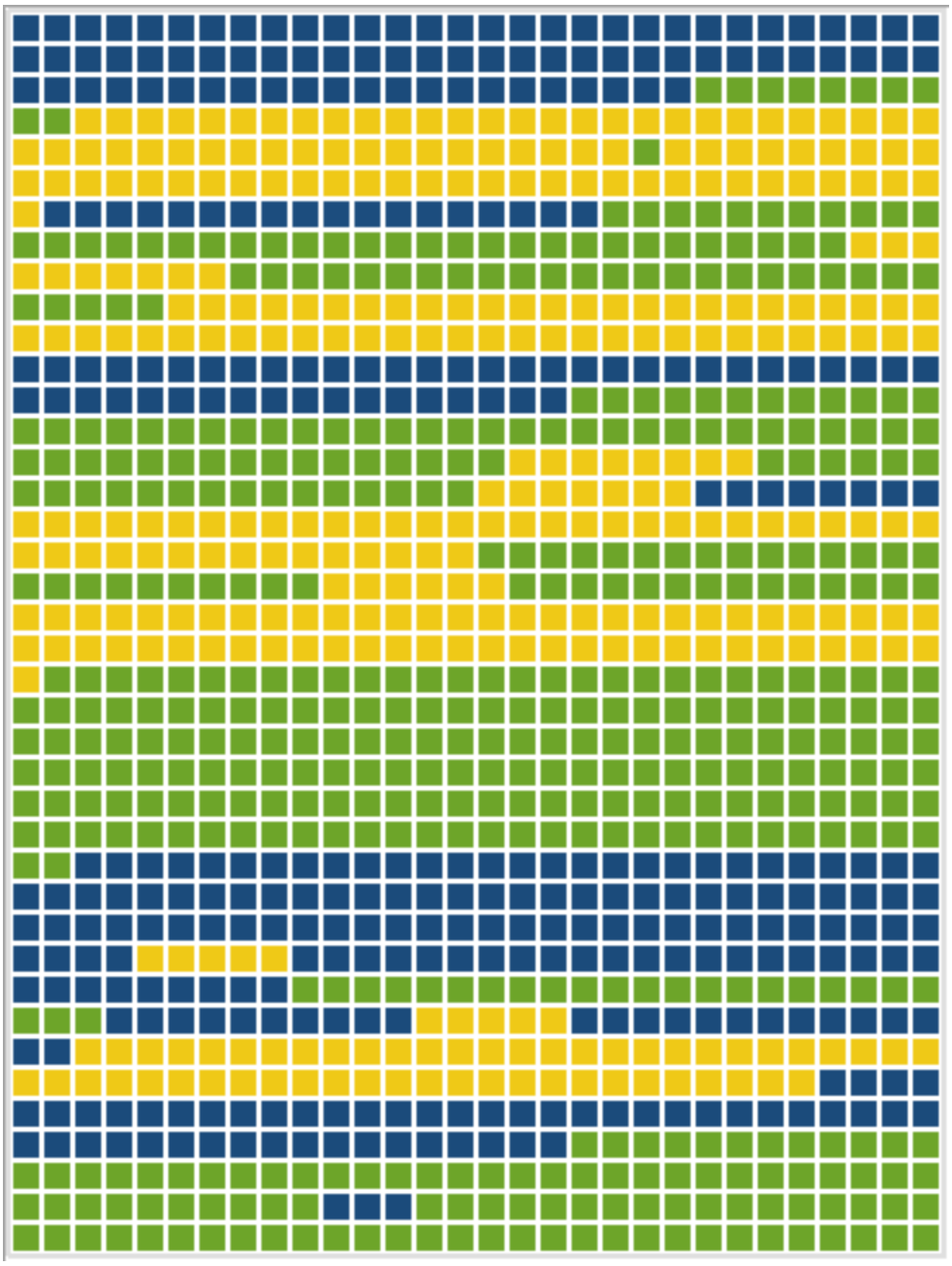

Figure 2. Distribution of codes by knowledge (yellow), motivation (blue), and organizational (green) factors generated from MAXQDA document portrait report

Code System	Johnn...	Fr Din...	Neil D...	Alvin ...	Arma...	Espie ...	Fathe...	Jack ...	Jerom...	Lawre...	Mike-...	Ramo...	Rober...	Rodn...	Visita...	SUM
Plans & Goals	2	9					2	1					2			16
Organization																0
Leadership							11									11
Faculty Training				1			1	4					2	1		9
Environment		3	2									2	2			9
Assessment			1										1		8	10
Reponsibilites	1	3		1	1	1	1			1	1	1	1	1	1	14
Facilities			1	1			1	1					3			7
Values & Attitude	1			4			1	1			2		4	1		14
Reputation of Graduates			1	1	1		1	4	2			1	4		1	16
Mission							4	1					2			7
Culture					1		5							1		7
Partnership Development																0
PTRCA				2						13						15
Knowledge																0
Reflecting on Partnerships		5			1	1	3							1		11
Referrals from graduates who are in industi						2	1	1					2			6
Companies sought out Don Bosco		1	3	1	2	2	3	1	1				2	3		19
Seeking partnerships						2	1	2						1		6
Criteria for selecting partners						1	1						1			3
Motivation																0
Mood about partnerships						1	1									2
Confidence in Partnerships							2						1			3
Values its partnerships	2		1				2					3	1			9
Curriculum														1		1
Motivation - Curriculum			1				6						2			9
Industry Feedback	2			3	1	1	2	3				1	2	1	1	17
bundling of programs			4					1	1			1				7
Course structure and TESDAs TRs	1		1	1			1			1			1			6
Integrating skills	1		4				1									6
OJT																0
Knowledge-OJT	2			2	1	3	1					1	3	2	2	17
Motivation-OJT	2			3	2	2	5		1	1			1	1		18
Scholarships																0
Scholarships-Motivation	2			1	4		1	3	2							13
Scholarships- knowledge						1	1	1	11				1			15
SUM	16	21	19	21	14	17	59	24	18	16	3	10	38	14	13	303

Figure 3. Frequency of codes per theme for each transcribed document and for all documents. generated from the MAXQDA code matric browser.

Results and Findings for Knowledge Influences

There were 15 knowledge related influences assumed in Chapter Two, four of which were factual, three were conceptual, five were procedural, and three metacognitive. Out of the four factual influences, one was partially validated to be an asset while the three were found to not be an asset. The 11 conceptual, procedural, and metacognitive influences were all validated to be an asset. One discovered asset is the knowledge of how to secure funding support from partners. These findings are summarized in Table 8.

Table 8

Findings on Assumed Knowledge Influences

Assumed Knowledge Influences	**Validated**
Factual	
The administration knows the criteria for selecting partners	no
The administration knows its networks of businesses and non-government organizations	no
The administration knows the current and future skills requirements of industry	partial
The administration knows the program standards of government and international governing bodies	no
Conceptual	
The administration understands the relationship between partnerships and employability of its graduates	yes
The administration understands the relationship between OJT and employability of its graduates	yes
The administrations knows the relationship between integrating industry requirements into the curriculum and employability of its graduates	yes
Procedural	
The administration knows how to secure and nurture partnerships with industry and non-government organizations	yes
The administration knows how to integrate the skills required by industry partners into its curriculum	yes
The administration knows how to collaborate with industry in the development of training equipment and facilities	yes

Table 8, continued

Assumed Knowledge Influences	**Validated**
Procedural	
The administration knows how to conduct OJT with industry partners	yes
The administration knows how to produce graduates who possess skills that matches the needs of its industry partners	yes
Metacognitive	
The administration knows how to establish goals about its partnerships and develop strategies to achieve those partnerships	yes
The administration knows how to monitor its relationships with its partners	yes
The administration knows how to reflect on its relationships with partners and identify areas for improvement	yes
Discovered Asset	
The administration knows how to secure support from its partners for scholarships	

Criteria for Selecting Partners

There were only two criteria for selecting partners mentioned in the interviews. One mentioned by the OJT Assistant that companies should have needs that are related to the programs offered by the school, and the second mentioned by Fr. Dindo that companies must promote values aligned with the school. The first surfaced when the OJT assistant related the story of a pest control company that wanted to partner with the school, but the school had no programs that would match the needs of the company. Understandably, the school cannot cater to companies whose needs are beyond the programs of the school. Even if the administration has

this criteria, it does not add any value to the ability of the school to form partnerships. The second referred to an instance when they had to turn down support from a politician's fund. Such funds were termed as pork-barrel funds in Philippine media and were subject to a lot of criticisms from the public, and so it was proper to turn down the offer of support. Though the administration applied these criteria to the selection of partners, this assumed influence is not an asset that has contributed to Don Bosco's ability to develop partnerships.

Knowledge of Networks of Businesses and Non-Government Organization

When the administration was asked how they got to know of the companies they are working with, several of the administration members explained that the companies were referred to Don Bosco by graduates working in the companies. The OJT assistant recounted,

> Companies would usually come to us because of referrals by graduates. Just recently, a company in refrigeration and air-conditioning came to us seeking OJTs and when we ask why Don Bosco, the companies would say that they have Don Bosco graduates working with them who they find are competent.

Shop head Jack recalled that some of his former students who are employed or are now supervisors in companies call the current students themselves for OJT opportunities. Shop head Robert bets that "if you walk in to a Toyota service center, more than 50% of the crew would be Don Bosco graduates." Fr. Dindo believes the reason they have a lot of partners is their alumni- "they are our ambassadors," he proudly stated.

The knowledge of a network of businesses and non-government organizations cultivated by the administration is not a reason for Don Bosco's ability to secure partners. Therefore, this assumed influence is not an asset. However, Don Bosco has been able to build up its partnerships because of their network of alumni who are their best "ambassadors."

Knowledge of Current and Future Skills Requirements

The administration keeps abreast of changing skills requirements through its close interaction with industry. The administration has several methods to get updated on current industry requirements. These include the following: 1.) the monthly OJT feedback sessions that they have with students; 2.) work immersions for faculty and students where they are made to perform some tasks in the different operations of the industry partners for a brief period; 3.) visits by the company representatives to the school; and 4.) graduate tracer studies which are surveys conducted to follow-up on graduates and determine whether they are employed or not, where they are employed, and the details of their employment. There are no formal labor market surveys implemented, such as surveys of employers or surveys of workers. However, it is the close working relationships of Don Bosco with employers that enable them to keep in touch with the market needs. It may be difficult for employers to predict what the skills requirements are years ahead, but employers know best which skills are in need and which are difficult to find (Johanson & Bonto, 2009).

The Assistant Technical Director explained that students who are in their OJT assignments for five months come back to the school once a month to report on their OJT experiences. He stated that “the OJT students have monthly feedback sessions with their class advisers in school, usually on Sundays. The feedback sessions are when they can tell their advisers of processes or technologies they have not yet encountered in class." All shop heads mentioned the OJT feedback sessions as a way of having a sense of what the industry requirements are. The External Relations Officer also cited the immersions that trainers or shop heads attend to know what the trends are in the industry. Shop head Jack narrated that sometimes the company’s trainer comes over to handle the sessions with the students.

The administration has methods that are in place to get feedback from its partners on what their skills requirements are. It may not be an elaborate process, but because they work so closely with the industry, the feedback they get is live and instantaneous. However, these methods provide knowledge of the current skills requirements than future skills requirements. This assumed influence is partially validated.

Knowledge of Program Standards of Government and International Governing Bodies

The national standards for skills training are contained in the Training Regulations, or TR, of the Technical Education and Skills Development Authority (TESDA). The TR's specify the outcomes that must be achieved by the programs and contain the minimum standards for training tools and equipment and teacher qualifications. TESDA groups competencies into three categories: basic, common, and core. The Philippine TRs are ISO certified and are benchmarked with the Australian competency-based training and education framework (OECD, 2017).

A comparison of Don Bosco's Course Structure against TESDA's training regulations for Automotive Mechanic in Table 9 show that Don Bosco offers the same technical competencies required in the TRs. However, the items in the table that are shaded yellow indicate that Don Bosco offers more in its curricula than what is required. Don Bosco's course structure includes items such as communication skills (preparing and delivering speeches); math (solve problems involving business and consumer loans); and life skills (creating a personal development plan). An inspection of the course structures for the other programs also reveal the same findings. Thus, the administration of Don Bosco knows and complies with the program standards of the government, and exceeds these standards by offering more than what is required.

Table 9

Comparison of Don Bosco Course Structure and TESDA Training Regulations on Automotive Servicing NC I

	Don Bosco Curriculum Automobile Mechanic = Automotive Servicing NC I	**TESDA Training Regulations Automotive Servicing NC I**
1	Communicate orally in the workplace using the English language	Participate in Workplace Communication
2	Received and respond to workplace communication	Received and respond to workplace communication
3	Provide work skill instructions	Provide work skill instructions
4	Practice basic housekeeping procedures	Practice basic housekeeping procedures
5	Practice Occupational Health and Safety procedures	Practice health, safety and environment procedures
6	Practice shop safety procedures	
7	Perform shop maintenance	Perform shop maintenance
8	Remove and tag engine system components	Remove and tag engine system components
9	Service engine mechanical system (For Gasoline Engine)	
10	Perform gas engine tune up	Perform gas engine tune up
	Perform diesel engine tune up	Perform diesel engine tune up
11	Remove and replace electrical/electronic units/ assemblies	Remove and replace electrical/electronic units/ assemblies
12	Move and position vehicle	Move and position vehicle
13	Inspect technical quality of work	Inspect technical quality of work
14	Work with others	Work with Others
15	Demonstrate work values	Demonstrate work values
16	Maintain quality systems	Maintain quality systems
17	Perform job estimates	Perform job estimates
18	Remove and tag automotive steering, suspension and brake system components	Remove and tag automotive steering, suspension and brake system components
19	Service Brake System	Service Brake System
20	Service Steering System	Service Steering System
21	Remove and tag transmission system parts	Remove and tag transmission system components
	Overhaul manual transmission	Overhaul Manual Transmission

Table 9, continued

	Don Bosco Curriculum Automobile Mechanic = Automotive Servicing NC I	TESDA Training Regulations Automotive Servicing NC I
22	Service automatic transmission	
23	Service clutch system	Service Clutch System
24	Service differential and front axle	Service Differential and Front Axle
25	Service suspension system	Service Suspension System
27	Perform under chassis preventive maintenance	No equivalent in the training regulations
28	Prepare and deliver speeches for specific purposes	
29	Solve problems involving simple and compound interests and simple and general annuities	
30	Solve problems involving stocks and bonds	
31	Solve problems involving business and consumer loans	
32	Manage self	
33	Create a personal development plan	
34	Demonstrate intimacy with Christ by praying, participating in Masses and receiving the other sacraments	
35	Perform aerobic exercises	
36	Perform muscle and bone strengthening exercises	

However, the shop heads believe that the competencies required in the Training Regulations are outdated and not aligned with industry needs. Shop head Johnny narrated his frustration with the training regulations:

> The training regulations is our problem. The TRs is generalized; it only specifies the minimum requirements. When you get to the industry, the needs are different. The needs are higher than what are in the TRs. This is because TESDA's TRs have been developed a long time ago, but technology changes fast.

Shop head Robert also believes that the TRs are not aligned with industry needs, and he related that he attended a meeting in TESDA precisely to talk about realigning the TRs with industry. These findings indicate that while Don Bosco knows and complies with the standards of the government, compliance does not necessarily translate to outcomes that are aligned with industry needs. This knowledge is therefore not an asset to the school's ability to develop its partnerships.

Partnerships and the Employability of Graduates

The relationship of the partnerships to the employability of the graduates needs no further elaboration as far as the administration is concerned. Shop head Ramon affirmed that the partners give them confidence because when their students graduate, they know there would be employment waiting for them. "Where would the students go if not for the partners?", he asked rhetorically. Shop head Robert emphasized that "Don Bosco would not be here if not for these partners." Shop head Johnny added that a shipping company recruits their fitter-machinists for OJT, and even during the OJT they already receive $ 1,100, an amount that is huge for a family living on minimum wage. Fr. Dindo added industry is crucial to the development and training of the students.

The employment reports of Don Bosco in February 2017 for the cohorts which started in June 2012 to June 2015 show that the graduates of Don Bosco are employed mostly with its industry partners. A sample of this employment report is shown in Figure 4. Based on the assertions of the administration and the record of employment Don Bosco graduates, the administration understands the relationship between partnerships and the employability of its graduates. This assumed influence is validated to be an asset.

DON BOSCO TECHNICAL INSTITUTE OF MAKATI, INC.
Tehnical Vocational Education and Training Center
Chino Roces Avenue, Pio del Pilar, Makati City
SY: June 2012 - October 2013

AUTOMOBILE MECHANIC COURSE BATCH 79 - B EMPLOYMENT REPORT AS OF JANUARY 2017

NO.	NAME	COMPANY NAME	COMPANY ADDRESS
1	XXXXX	HONDA CARS MAKATI, INC.	#1 Pres. Sergio Osmeña Highway, Magallanes, Makati City
2	XXXXX	PURSUED COLLEGE	
3	XXXXX	HYUNDAI ALABANG, INC.	Alabang Hills Village, Cupang Muntinlupa City
4	XXXXX	PGA CARS, INC.	201 EDSA Mandaluyong City
5	XXXXX	DB-TOYOTA SHAW, INC.	Chino Roces Ave., Makati City
6	XXXXX	CITIMOTORS, INC.	5TH Flr. Citimotors Bldg., Pasong Tamo, Makati City
7	XXXXX	HONDA CARS MAKATI, INC.	#1 Pres. Sergio Osmeña Highway, Magallanes, Makati City
8	XXXXX	FORD GLOBAL-AUTO SALES	Blk. 15, 2nd Flr. FGC Bldg., Rizal Drive, Crescent Park West, Bonifacio Global City
9	XXXXX	SUZUKI - WHEELS, INC.	E. Rodriguez Jr., Quezon Avenue, Quezon City
10	XXXXX	PGA CARS, INC.	201 EDSA Mandaluyong City
11	XXXXX	SUZUKI MARCOS H-WAY	Marcos H-way, Dela Paz, Pasig City
12	XXXXX	SUBARU GREENHILLS	187 EDSA Greenhills, San Juan City, Metro Manila
13	XXXXX	TOYOTA PASIG, INC.	#124 E.R Rodriguez Jr., Ave., Brgy. Ugong, Pasig City
14	XXXXX	HYUNDAI GLOBAL CITY	5TH Ave., 26th St., Bonifacio Global City, Taguig City
15	XXXXX	FORD CAINTA	Km 19 Aeon Bldg., Ortigas Ave., Extn. Cainta Rizal
16	XXXXX	*Dropped as of June 4, 2012 / not interested*	
17	XXXXX	NORTH AMERICAN AUTOMOTIVE SERVICE	Brgy. Pulong Sta. Rosa city of Sta. Rosa, Laguna City
18	XXXXX	**SUZUKI/ RESIGNED AS OF 5/28/13/ No show as of June 2013**	
19	XXXXX	CATS MOTOR, INC.	1008 EDSA Greenhills, San Juan, Metro Manila
20	XXXXX	PGA CARS, INC.	201 EDSA Mandaluyong City
21	XXXXX	PHILIPPINE FORKLIFT	PCPD BLDG. 2332 Don Chino Roces., Taguig City
22	XXXXX	TOYOTA PASONG TAMO, INC.	2292 Pasong Tamo Ext., Makati City
23	XXXXX	SATP - TOYOTA ALABANG, INC.	Alabang-Zapote, Alabang, Muntinlupa
24	XXXXX	PGA CARS, INC.	201 EDSA Mandaluyong City
25	XXXXX	PRINCE MOTOR CORPORATION	# 43 Commonwealth Ave., Quezon City
26	XXXXX	HERTZ RENT A CAR	Pasong Tamo Extn., Makati City
27	XXXXX	FORD GLOBAL-AUTO SALES	Blk. 15, 2nd Flr. FGC Bldg., Rizal Drive, Crescent Park West, Bonifacio Global City
28	XXXXX	TOYOTA ABAD SANTOS	Toyota Abad Santos, Manila
29	XXXXX	CATS MOTOR PHILIPPINES	# 1008 EDSA Greenhills, San Juan, Metro Manila
30	XXXXX	SUZUKI - HYCHSWERT AUTOWORKS	L. Mendoza Otis, Paco Manila

Figure 4. Sample of employment report for cohort 79 of automobile mechanic course.

On-the-job (OJT) or In-plant Training and Employability of Graduates

The administration understands that the on-the-job training usually ends up in employment by the companies that host the trainee. The OJT Assistant stressed that the OJT companies absorb about 90% of the trainees; this is validated when the OJT reports are compared with the employment reports. The OJT reports for cohort 85- those who started in June 2015 and graduated in October 2016, when compared with the employment report of February 2017, show that most of the graduates were employed with the same companies where they did their on-the-job training. In the few instances that it did not, it led to employment in another

similar company. A sample of the comparison between the OJT report and the employment report is shown in Table 10.

Table 10

Comparison of OJT report and Employment Report for Cohort 85 (June 2015) of the Automobile Mechanic Course

Student #	OJT Report as of September 2016	Where employed as of Feb 2017
1	Penguino Motor Corp.	Honda Cars
2	Honda Cars Makati, Inc. - Global	Honda Cars
3	Honda Cars, Inc. - Shaw	Honda Cars
4	Back to work	
5	Honda Cars Makati, Inc.	Honda Cars
6	Dropped due to health reason	
7	JRCD TRANSORT TAXI	JRCD TRANSORT TAXI
8	Dropped due to lack of interest	
9	Shown only on OJT Feedback but no OJT	Honda Cars
10	Ditoy Auto Repair Services	Standard Insurance
11	Egarage Motor Works, Inc. (Monkey Wrench Garage)	Egarage Motor Works, Inc. (Monkey Wrench Garage)
12	KIA Pasay	KIA Pasay
13	SM ACA/ Stunfield	SM ACA/ Stunfield
14	Honda Cars Makati, Inc.	Honda Cars Makati, Inc.
15	Hyster Philippine Forklift, Inc.	Hyster Philippine Forklift, Inc.
16	Denso Koolpix Service Co.	Denso Koolpix Service Co.
17	Hyundai Pasig, Inc.	Hyundai Pasig, Inc.
18	Bosch Car Service	Bosch Car Service
19	Toyota Motor Philippines School of Tehnology	Toyota Motor Philippines School of Tehnology
20	KIA Pasay	KIA Pasay
21	NO Show	

Table 10,continued

Student #	OJT Report as of September 2016	Where employed as of Feb 2017
22	Hyundai Parañaque-West	Hyundai Parañaque-West
23	Honda Cars Makati, Inc.	Honda Cars Makati, Inc.
24	Bormaheco	Bormaheco
25	Hyundai Pasig, Inc.	Hyundai Pasig, Inc.

Shop head Alvin describes the OJT as a can opener that opens up a whole new view of the real world, with the actual technologies that are in use in a real work environment. He further shared that the on-the-job training teaches students interpersonal skills, teamwork, and the ability to deal with different people. Fr. Dindo articulated that learning is authentic when students are in the workplace. Shop head Alvin added that a bonus of the OJT is that students get inspired when they see previous Don Bosco graduates assigned as supervisors or team leaders. Hands-on learning is one of the most effective modes of instruction, taking from the principles of the old Chinese proverb "I hear and I forget. I see and I remember. I do and I understand" (Mourshed et al., 2012). Based on these findings, this assumed influence is validated to be an asset.

Relationship Between Integrating Industry Requirements Into the Curriculum and Employability

The administration understands the relationship between integrating industry requirements into the curriculum and the employability of their graduates. In response to the survey question on this, 11 out of 12 highly agree that integrating industry requirements into the curriculum is essential to the employability of Don Bosco graduates, while one agrees. Figure 5 shows the responses of the administration to this survey question.

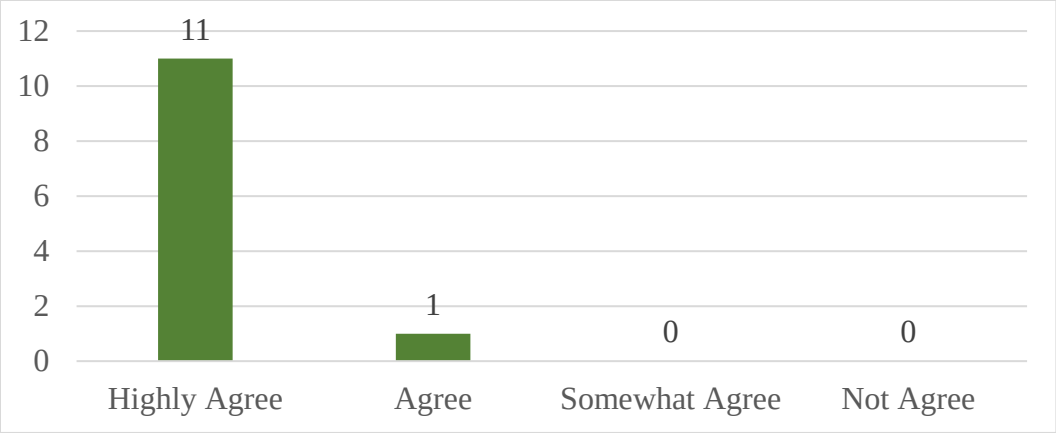

Figure 5. Tabulation of survey results among the administration on whether integrating industry requirements into the curriculum is essential to the employability of graduates.

Most changes that the shop heads modify to the curriculum are done to respond to industry needs so that when the students graduate from the program, they would have the skills that are required by industry. For example, shop head Johnnie narrated that the bundling of the welding and machining programs into one course called fitter machinist was done precisely to address the needs of ship owners for engine crew who can repair and fabricate metal parts on board the ship. This course has produced graduates who work as engine crew of shipping lines.

Shop head Jack mentioned that the bundling of the refrigeration and air-conditioning mechanic and the electrical installation and maintenance into one program was also designed to respond to the needs of the air-conditioning industry for technicians who knew both the mechanical and electrical aspects of cooling systems. The PTRCA program mentioned was designed to meet the needs of Porsche for service mechatronics. So the administration knows that responding to industry requirements and integrating these into the curriculum results in better employability for its graduates. This assumed influence is validated to be an asset.

Knowledge of How to Secure and Nurture Partnerships

Don Bosco has 42 scholarship benefactors and 112 industry/ OJT partners as of June 2016, based on the List of Industry Partners and the Scholarship Monitoring Progress Chart

provided by the external relations office. The list of industry partners and sponsors includes dealers of automotive brands such as Porsche, Honda, Toyota, Hyundai, and Kia; other automotive service centers; manufacturing companies; SM and Ayala Foundation; and other reputable companies.

When asked how the school secured partnerships with these companies, the administration was consistent in saying that these companies initiated contact and approached Don Bosco. The companies came because the companies were happy with Don Bosco graduates working with them, or were referred by somebody who knew about Don Bosco. The reputation for producing good technicians, skilled workers, and workers with the right attitudes and work ethic were the reasons why these companies came to Don Bosco. Fr. Dindo said that about 90% of the companies came to Don Bosco, and added that these companies came with a need that they knew Don Bosco could fill. As Fr. Dindo put it- "you produce good technicians, the companies will come to you."

Almost all the administration mentioned how important the reputation of Don Bosco graduates was to securing new partners. The External Relations Officer narrated that the reputation of Don Bosco graduates spread by word-of-mouth:

> Our graduates are known to have excellent skills, are industrious, and have the right attitude and so the companies come to us. However, it was not always like this. Before, the brothers would go from company to company to look for partners.

Shop head Robert described how graduates have gone to work in countries in the Middle East and established a reputation there. "Companies would ask where these workers came from and the employers would be referred to Don Bosco", he explained, referring to Al-Futtaim and Petromin as the companies in the Middle East who came to Don Bosco due to their experiences

with Don Bosco graduates. Shop head Ramon said that for his department, electromechanical technician, he could not even supply the current demands of the industry partners.

From these findings it can be concluded that Don Bosco knows how to secure partnerships, and this knowledge is grounded on the ability of Don Bosco to produce good graduates. About 90% of the partnerships were formed as a result of the reputation of Don Bosco graduates. This assumed influence is validated to be an asset.

How to Integrate Industry Requirements into the Curriculum

The curriculum of Don Bosco at the onset contains input from Industry because it follows the training regulations issued by the Technical Skills and Development Authority or TESDA, and these training regulations have been formulated with the participation of the industry. The training regulations establishes the minimum standards, and it specifies the detailed outcomes, training tools and equipment, and teacher qualifications required for each program (OECD, 2017). A Technical and Industry Expert Panel develops each training regulation and is supervised by a Technical Advisory Panel, both of which are composed of industry and academe experts. The training regulations however limit the ability of the administration to align its curriculum with industry needs because the school is required to follow these regulations. What the shop heads do to respond to industry requirements and at the same time stay within the training regulations is to change the content at the level of the course structure or the lesson plans, as long as these changes are over and above what is required by the training regulations. Shop heads are informed of the new requirements of the industry as they attend technical training programs offered by partners, join immersion programs, or through monthly OJT feedback sessions they have with students. These avenues provide the administrative mechanisms to detect

any changes in the skills requirements of industry and allow them to make adjustments in the lesson plans or course structures.

Porsche Training and Recruitment Center Asia (PTRCA). The PTRCA program warrants a separate section as it demonstrates how industry and academe can collaborate intensively to produce graduates with the necessary skills and supply industry with a steady stream of qualified workers. The PTRCA was established with the involvement of Porsche AG, PGA Cars Inc. (Philippines), Don Bosco Mondo, and Don Bosco Technical Institute, Makati. Porsche AG is the manufacturer of the world-renown, high-quality brand of Porsche automobiles with headquarters in Stuttgart, Germany. PGA Cars Inc. is the importer and distributor of Porsche, Audi, Lamborghini, and Bentley in the Philippines and is part of the Coyiuto Group of Companies. Don Bosco Mondo is a global non-profit organization committed to supporting the projects of Salesian priests and sisters worldwide.

The PTRCA was set up in response to the rising demand of many importers of Porsche in emerging markets, particularly in the Middle East and Asia-Pacific, for Service Mechatronics specialists. Porsche and Don Bosco Mondo chose the Philippines because English is one of the country's official languages and is the medium of instruction. It also has a sizable population of migrant workers in other countries who are used to working abroad. Lastly, it has the presence of Don Bosco Technical Institute, which established a reputation for its automotive servicing program.

In the PTRCA program, the specific training needs of Porsche were added on to the regular automotive program of Don Bosco. The students go through the regular automotive program of Don Bosco during the first 10 months, and then undergo a six-month specific Porsche training, after they which they spend another three months of practical training in PGA

cars. The curriculum and trainers during the six months Porsche training are provided by Porsche but are housed in Don Bosco. Figure 6 shows the structure of the PTRCA program.

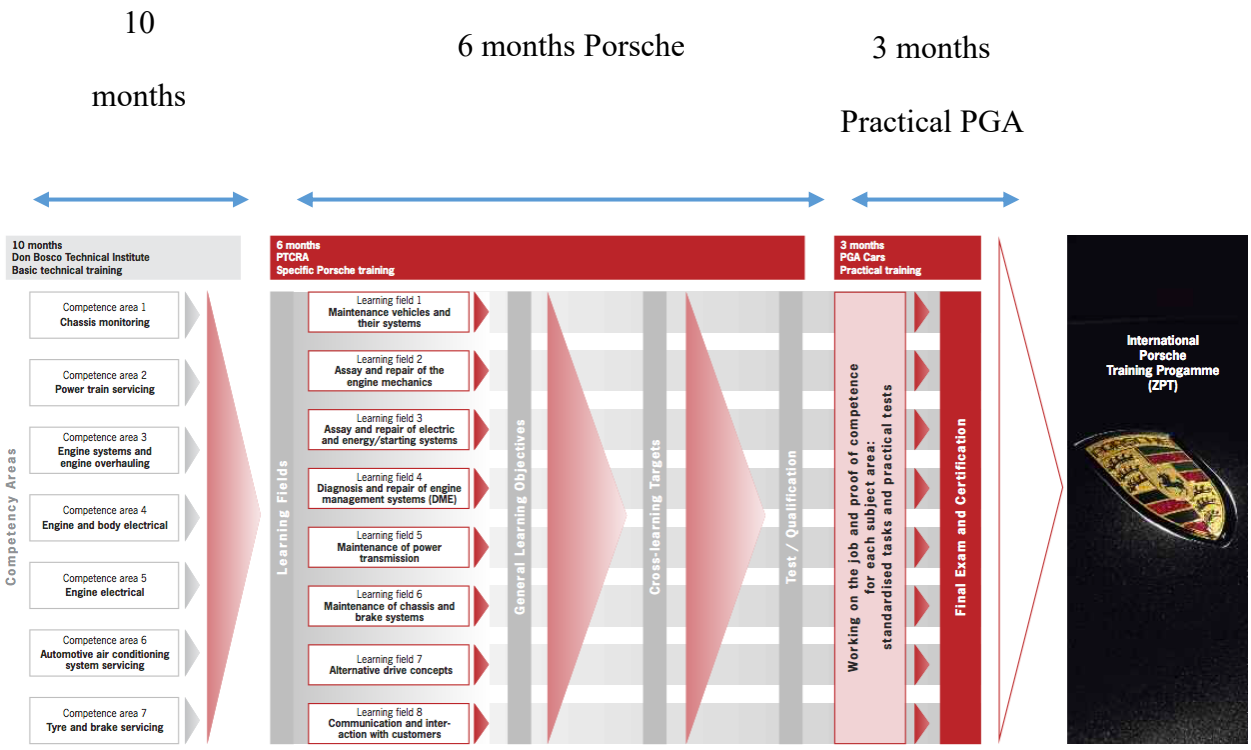

Figure 6. PTRCA program structure.

Holcim. In the Cement Technician course with Holcim, the curriculum was designed by Don Bosco in coordination with Holcim, with final approval from Holcim. This course takes three years to complete, with the first two years in Don Bosco, and the last year in any of the plants of Holcim as an OJT. During the first two years, students learn a variety of skills that Don Bosco teaches through its regular offerings such as welding, machining, electrical installation, industrial controls; but also enriched with other subjects such as Computer Aided Design (CAD), Instrumentation and Calibration, and Process Control. The summers in between and the last year are spent training in the cement plants of Holcim. Annex B shows the curriculum of the Cement Technician course.

Don Bosco knows the current skills requirements of the industry because of its close collaboration with industry and can work with the industry to integrate these skills requirements into its curricula. This assumed influence is validated to be an asset.

How to Secure Support from its Partners for Scholarships

Don Bosco subsidizes its students to the extent of 55% of the total tuition and fees for the entire program. Almost all students at the start of the program enjoy the 55% subsidy from the school. However, the majority of the students are still able to benefit from the scholarship support provided by partners and donors. Table 11 is a summary of the Scholarship Monitoring Progress Charts for Cohorts 83 to 88. This table shows that 52% of the new enrollees of Don Bosco were able to secure full scholarships, and 5% were able to get partial scholarships. Big donors include SM Foundation with 110 scholars in Cohort 87, Toyota with 15, Porsche with 44, and Propeller Club of Manila with 26. Scholarship support provided by these sponsors is the primary source of revenue for the school because most of its students cannot pay the full tuition and fees. According to Fr. Dindo, scholarship funds from sponsors increased from Pesos 5 million when he started in 2010, to P 25 million currently- a five-fold increase. The scholarship funds cover about 70% of the annual cost of its operations.

Table 11

Summary of Scholarship Monitoring Progress Charts

Cohort #	No of Enrollees	No of Scholars			No of Sponsors
		Full	Partial	Total	
Cohort 88	276	177	0	177	10
Cohort 87	489	296	33	329	20
Cohort 86	416	200	20	220	14
Cohort 85	473	209	34	243	21
Cohort 84	279	121	0	121	15
Cohort 83	553	295	30	325	25
Total	2486	1298	117	1415	105
Percentage to Enrollees		52%	5%		

According to the external relations director, what helped bring about the increase in scholarship support was a change in the way they transacted with prospective employers. While before they would entertain companies who only wanted to recruit and gain access to their database of graduates, Don Bosco now only allows access to companies who will also support the education of the students. Why he asked, would he allow companies to reap the benefits of what others invested in? So companies who supported the education of the students were given the priority in recruiting its graduates. Based on the number and amount of scholarship support that Don Bosco secures from its partners, the procedural knowledge of how to secure support for scholarships is validated to be an asset.

How to Collaborate with Industry on the Development of Training Equipment and Facilities

The administration knows how to collaborate with industry on the development of training equipment and facilities, as revealed in the agreements it was able to secure with partners. Training equipment were usually secured in conjunction with a new program that a

partner company wanted Don Bosco to offer. In the Cement Technician course for example, Holcim agreed to provide for the upgrade of equipment, tools, and teaching material that were needed to support the course. Holcim also agreed to build a mechanical workshop at the manufacturing sites for training. In the PTRCA program, PGA cars provided support for the training facility. Starting with a training room in 2008, the PTRCA facility was expanded in 2015 to include hydraulic vehicle lifters and ten Porsche vehicles. These examples show that the administration knows how to collaborate with industry on the development of training equipment and facilities. This assumed influence is validated to be an asset.

How to Conduct On-the-job Training (OJT) with Industry Partners

Don Bosco has incorporated some practices into its On-the-job training programs that have made the training more relevant. First, the OJT program is conducted over a duration of 960 hours, eight hours a day, six days a week, over four to five months. The OJT hours is longer than that of most schools in the country. Second, students train in companies where they will most likely be employed. The OJT coordinator said that 90% of the trainees go on to be employed by the same company. Third, students are only allowed to join the OJT upon successfully passing the assessment examinations for the National Certifications, attesting to their ability to perform some skilled work. Lastly, monthly OJT meetings are conducted for the students to have a guided reflection on what they have learned, as well as give them an opportunity to provide unrestricted feedback on their training conditions. Fr. Dindo explained that the school gives them an avenue to talk freely, as opposed to when they are in the companies where they are more guarded when they talk.

Unesco-Unevoc (2015) defines a quality apprenticeship system as something that smoothens the school-to-work transition by providing relevant work experience in a real labor

market environment. Don Bosco has incorporated some practices into its OJT programs to prepare students for a seamless school-to-work transition. The assumption that Don Bosco knows how to conduct on-the-job training programs with industry partners is validated to be an asset.

How to Produce Graduates who Possess Skills that Matches the Needs of the Industry

The employability of Don Bosco's graduates is evidence of its ability to produce graduates who have the skills needed by industry. An examination of the employment reports of cohorts 79 to 85, those who graduated from October 2013 to October 2016, show that almost all its graduates have secured employment in industries where they trained. The Assistant Technical Director and some shop heads claim that even before the OJT ends, some of the students are already employed by the company. In fact, shop head Lawrence said that for the PTRCA training, students are assured of employment with Porsche even upon enrollment.

Other evidences from the research show that the skills of Don Bosco's graduates are in demand: 1.) Al-Futtaim, a diversified conglomerate in the Middle East, came to partner with Don Bosco because of a positive experience it had with a Don Bosco graduate who was an employee. Al-Futtaim has sponsored two batches of scholars yearly as far back as 2012 for its automotive centers in the Middle East; 2.) Almost 50- 80% of the crew of Toyota Motors service centers in Metro Manila come from Don Bosco, according to shop heads Robert and Alvin; 3.) The report published by Porsche reveals that the PTRCA program has trained 40 students yearly since it started in 2008, and has sent graduates to Porsche’s dealer networks as service mechatronics specialists around the world (Porsche, 2012). The employability of Don Bosco’s graduates is proof that they possess skills needed by industry. This assumed influence is validated to be an asset.

Reflecting on Partnerships, Goals, and Plans

The administration is highly sensitive to what is going on in its environment and is aware of competitive and market forces that are affecting its partnerships. The merger of Holcim and La Farge, for example, has slowed down the partnership with Holcim as the human resources needs of the merged company changed. The political tensions between Saudi Arabia and Qatar have affected the desire of Al Futtaim to hire Filipino workers. The closure of the Ford manufacturing plant near Manila caused a decline in the demand for automotive workers. Toyota set-up its own automotive training center and poses a threat to the sustainability of its partnership with the school.

Despite all this, Fr. Dindo remains optimistic. He believes that partnerships have their lifetimes and that they progress through periods of growth, maturation, and eventual decline. He also realizes that the market for technical and vocational education is vast, and Don Bosco's footprint on that market is still small. So he plans to continue developing new partnerships; looking at opportunities to develop partnerships in other countries such as China, India, and Japan. While he wants to stay focused on his core programs, he wants to move up to the higher level qualifications such as NC 3 and NC 4. He plans to acquire more advanced technologies such as the Computerized Numerical Controlled Machines for metal fabrication work.

On a more tactical level, the administration planned to expand its industry partnerships as part of its Action Plans for SY 2016-17. The administration included under Extension, Consultancy, and Linkages the following primary objectives: 1.) To invite more sponsors and industry partners, and 2.) To develop at least two customized or dual training programs within the school year. Some action plans were identified by the administration to achieve its objectives. First, they planned to prepare a portfolio about the TVET Center, distribute these

portfolios during industry gatherings, and conduct follow-on meetings. Second, they planned to invite potential industry partners whom they can develop customized programs with.

The ability to reflect on their partnerships, take a broad view of the things that are happening in the environment, establish goals, and formulate strategies and plans show that the administration has these metacognitive knowledge assets. The three assumed influences covering metacognitive knowledge: 1. Establishing goals for its partnerships and developing strategies to achieve those goals; 2. Monitoring relationships with its partners; and 3. Reflecting on relationships with partners and identifying areas for improvement are all validated to be an asset of the administration.

Summary of Knowledge Findings

The assumed factual knowledge influences of a network of businesses, a criterion for selecting partners, and the program standards of the government did not turn out to be assets of the administration. The knowledge of current and future skills requirements was only partially validated as it is difficult to predict future requirements. However, what came out as a strength was Don Bosco's network of alumni, discussed separately under organizational influences. The conceptual knowledge of partnerships, the role of OJT to employability, the importance of integrating industry requirements, were all validated to be assets. The procedural knowledge- the how-to, of the different aspects of the administration's collaboration with industry were all validated to be assets. Finally, the ability to monitor and reflect on the partnerships, to set goals for the organizations, and to develop plans to achieve those goals, were all determined to be assets of the administration.

Results and Findings for Motivational Influences

Motivational theory asserts that the value that students place on a task, and their perceptions about self-efficacy and competence, motivate students to perform better (Pintrich, 2003). There were twelve motivational influences that were assumed in Chapter Three, five of which were influences brought about by value, four stemming from self-efficacy perceptions, and three arising out of positive moods. All of these influences except one were all validated to be an asset. The other remaining assumed influence- the confidence in integrating industry requirements into the curriculum was partially validated. Table 12 summarizes the findings on motivational influences.

Table 12

Findings on Assumed Motivational Influences

Assumed Motivational Influences	
Value	Validated
The administration values the integration of industry requirements into its curriculum	yes
The administration values collaboration with industry on the development of training equipment and facilities	yes
The administration values scholarships provided by its partners	yes
The administration values on-the-job training provided by its industry partners	yes
The administration values its ability to supply industry partners with manpower who possess the relevant skills	yes
Self-Efficacy	
The administration is confident in its ability to build its partnerships	yes

Table 12,continued

Assumed Motivational Influences	
Self-Efficacy	
The administration is confident in its ability to integrate industry requirements into its curriculum	partially
The administration is confident in its ability to secure support from partners for scholarships and supervised in-plant training	yes
The administration is confident in its ability to produce graduates who have the skills needed by industry	yes
Mood	
The administration feels positive about its partnerships with industry and non-government organizations	yes
The administration feels positive about the integration of industry requirements into its curriculum	yes
The administration feels positive about getting support from industry for scholarships and OJT	yes

Value of Integrating Industry Requirements Into Its Curriculum

The administration realizes the need to integrate the requirements of the industry into its curriculum to make its graduates more employable. When asked in the survey how valuable is the work of integrating industry requirements into its curriculum to the employability of its graduates, 11 out of the 12 administration members rated this as highly valuable, and only one rated it as valuable, as shown in Figure 7. Fr. Dindo articulated the value of integrating industry requirements:

If the industry is not involved in the curriculum, if the industry is not involved in the crafting of the program, then the training will be shallow and might even be obsolete because it will not be attuned to industry standards.

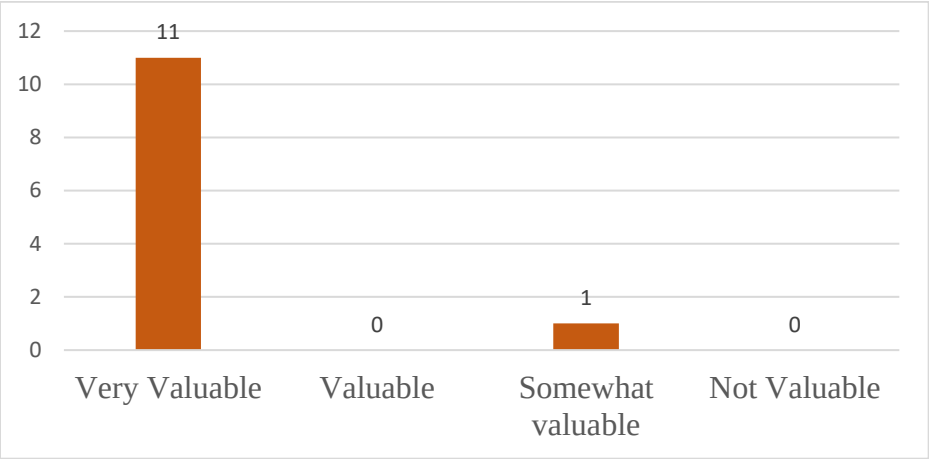

Figure 7. Tabulation of survey results among the administration on how valuable is the work of integrating industry requirements into the curriculum.

As discussed in the section on knowledge, the administration understands how essential the work of integrating industry requirements into the curriculum is to the employability of its graduates. The attainment value of the effort on integrating industry requirements into the curriculum is employability of its graduates. This assumed influence is validated to be an asset.

Value of Collaboration with Industry on the Development of Training Equipment

A tour around the campus shows how industry has collaborated with the school on the development of training equipment. Most notable are the training facilities for the automotive program. The school has an area which simulates and functions as an automotive service center facility with real cars that the students can experiment on. Figure 8 shows the automotive training facility put up with the support of Ford.

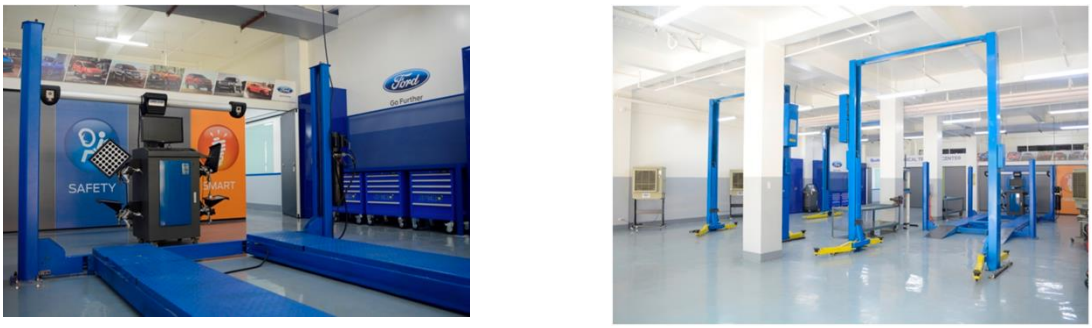

Figure 8. Ford automotive training facility.

The highlight of the automotive facilities is the Porsche Training and Recruitment Center Asia (PTRCA). The PTRCA consists of a service center facility measuring about 1200 square meters, complete with hydraulic automotive lifters. There is also a separate room measuring about 40 square meters for lectures and discussion. The rooms comply with international Porsche service standards and are used exclusively for Porsche training. There are 10 Porsche vehicles in the center for the students to do hands-on training. Figure 9 shows an artist's rendition of the PTRCA training facility and students doing hands-on training in the laboratory. This laboratory, the equipment, and the Porsche vehicles were all provided by Porsche.

Figure 9. PTRCA training facility.

Other laboratories show the collaboration of the school with industry. Figure 10 shows the mechatronics laboratory that was set up with the support of Holcim. Figure 11 is a picture of

the refrigeration and air-conditioning training room, equipped with refrigerators and air-conditioners provided by Concepcion Industries, the local manufacturer and provider of the Carrier brand. The Don Bosco TVET center is a newly constructed facility built with support from partners for cement, elevators, steel, and air-conditioning equipment.

The support that the administration secured from partners for the building, laboratories, and training equipment show that Don Bosco values collaboration with industry for the development of facilities. This assumed influence is validated to be an asset.

Figure 10. Mechatronics training facility

Figure 11. Refrigeration and air-conditioning training facility

Value of Scholarships Provided by Partners

Industry partners contribute to the scholarships of the students and allow Don Bosco to continue to fulfill its mission of providing technical education to the marginalized youth, thereby helping them get out of poverty. Don Bosco takes in about 1,000 students yearly, a little more

than half of them in the June cohort, and the balance during the November cohort. Don Bosco spends P43,000 for the whole 15-month education of the students, which makes the cost of educating 1000 students at 43 million pesos. Since most of the students receive scholarships, the cost value of these scholarships combined even at 50% of the whole cost is roughly 20 to 22 million pesos yearly, which is close to Fr. Dindo's estimate of 25 million pesos yearly. Fr. Dindo emphasized the importance of these scholarships,

> Our partners know that we are working for the benefit of the students, that this is not a for-profit institution, and that whatever help they give is meant to help these underprivileged youths get employed, to be productive members of the society, to become good employees.

Several of the shop heads confirmed that these scholarships have indeed allowed their students to transform their lives. The PTRCA shop head added that Porsche hires the graduates of the program and in the remote case that a graduate is not, the skill that he or she gained from the program will give that graduate a big head start.

There are attainment values to all stakeholders of the scholarships: 1.) It allows the partners a steady pipeline of highly skilled workers; 2.) it enables the students to gain an education that will help them secure employment, and 3.) it allows Don Bosco to fulfill its mission of transforming the lives of the out-of-school and indigent youths. The administration realizes the cost value and the attainment value of the scholarships provided by partners. This assumed influence is validated to be an asset.

Value of On-the-Job Training Provided by Partners

Motivation is provided by the intrinsic value of the task- the enjoyment one gets from performing a task; and by a utility value- the value in facilitating the achievement of one’s long-

term goals (Eccles, 2013). The OJT has an intrinsic value and a utility value to the students and the administration, which motivates them to accomplish the OJT.

On-the-Job training has an intrinsic value in that it deepens learning. Fr. Dindo expressed that "on-the-job training is an important piece of the puzzle because, without OJT, the training we provide is superficial." The Assistant Technical Director stated that they have equipment to simulate the actual work, but there is nothing that beats being in the shop floor itself. Shop head Robert stressed that an OJT allows the student to experience the real world, with the element of having to interact with fellow workers and customers. He added that the OJT is the chance for students to demonstrate their skills, attitude, and values and make an impression on their future employer. Shop Head Alvin affirmed that the OJT helps develop interpersonal skills and teamwork among the students.

OJT has a utility value to the students because it helps them achieve their long-term goal of employability. As discussed in the previous section, 90% of the OJT placements lead to employment by the same companies, as confirmed by the OJT assistant. The Scholarship Assistant observed that employers make their hiring decision during the OJT. The Scholarship Assistant stated that “If the trainee shows potential, the company will hire the students. If the trainee fails the standards of the company, then that trainee will not be hired”. All twelve of the administration surveyed said that OJT is very valuable to the employability of the graduates, as shown in Figure 12.

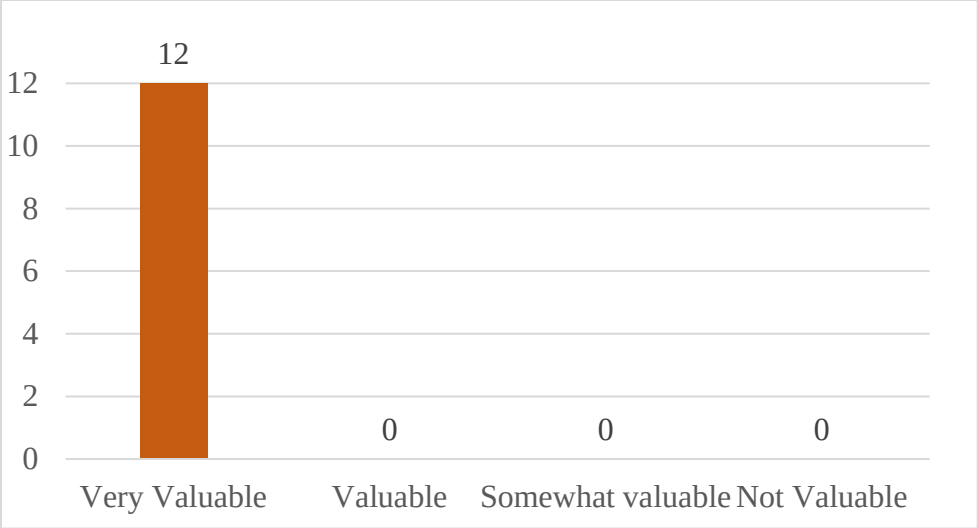

Figure 12. Tabulation of survey results among the administration on how valuable is OJT to the employability of graduates.

The OJT has an intrinsic value and an attainment value for the students and the administration. The assumed influence that the administration values on-the-job training provided by industry partners is validated to be an asset of the administration.

Value of Ability to Supply Industry Partners with Graduates who Possess the Relevant Skills

The record of employability of Don Bosco's graduates are an indication of the administration's ability to supply businesses and organizations with human resources who possess the relevant skills. As can be gleaned from Table 13, Don Bosco graduates for cohorts 76 to 84, or those who entered Don Bosco from November 2011 to November 2014, are all employed. The employment rate is consistent for all cohorts, meaning everyone is absorbed into the industry.

Table 13

Employability of Graduates for the SYs 2011-12 to 15-16 (Don Bosco Profile)

Cohorts	Date Entered	Enrolled	Graduated	Assessed	Certified	Employed	% Employed: Graduated
84	Nov-14	424	337	313	313	328	97%
83	Jun-14	532	459	366	366	459	100%
82	Nov-13	380	319	na	na	319	100%
81	Jun-13	504	431	na	na	462	107%
80	Nov-12	306	267	na	na	267	100%
79	Jun-12	580	488	na	na	488	100%
78	Nov-11	352	291	na	na	291	100%
77	Jun-11	490	433	na	na	433	100%
76	Nov-11	287	243	na	na	243	100%
Total		3855	3268	679	679	3290	101%

The administration values its ability to supply the human resource needs of partner companies with graduates who possess the relevant skills. The Assistant Technical Director believes the school's products are superior. As he stated, "companies approach us because Don Bosco is the first that comes to mind when it comes to technical skills needs." Shop head Alvin affirmed that "businesses know Don Bosco as a technical school whose graduates exhibit not only technical skills but good values as well." Shop head Jack recounted that a big air-conditioning firm approached him because "your graduates are outstanding and orderly." The Scholarship Assistant narrated the story of a graduate who won the skills Olympics of a company in Saudi Arabia, and when they traced where he came from, they identified Don Bosco and thereafter the company approached Don Bosco to seek a partnership. The assumed influence that the administration values its ability to supply the human resource needs of industry with graduates who possess the relevant skills is validated to be an asset.

Self-Efficacy

The administration of Don Bosco has achieved a level of confidence in its ability to attract industry partners because of the quality of graduates it produces, thereby increasing their motivation to persist in the effort to get industry partners. When people expect to do well, the motivation to try harder, to persist, and perform better also increases (Pintrich, 2003). Because the administration expects to do well, it is motivated to perform better.

The following charts show how the administration responded to the questions on confidence. On the question of whether it is confident in its ability to establish partnerships, nine participants said they were highly confident, and three said they were confident. On the question of whether they were confident in the ability to conduct on-the-job training, ten said they were very confident, and two said they were confident. However, on the question on whether they were confident in their ability to integrate industry requirements into the curriculum, five said they were very confident, and six said they were confident, with one not responding to the question.

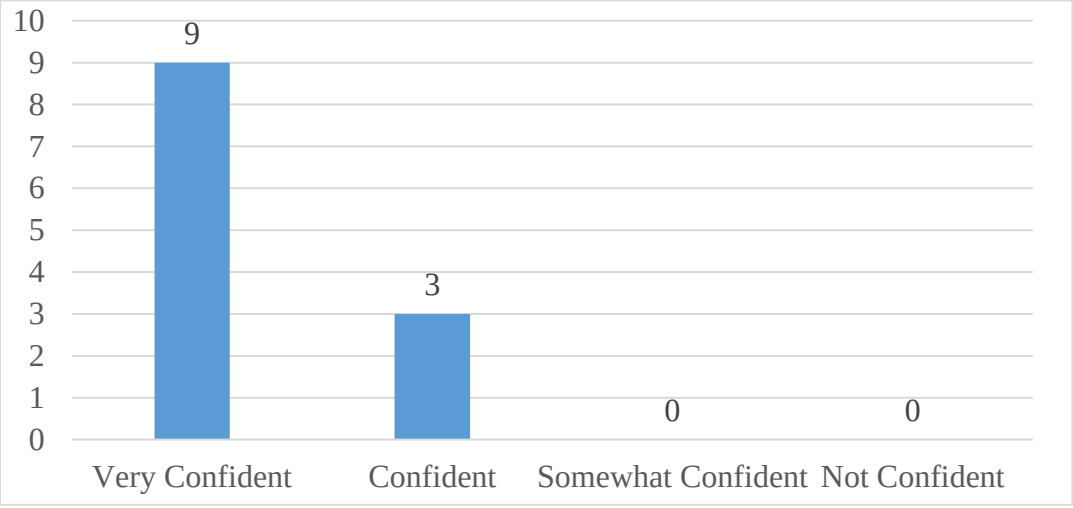

Figure 13. Tabulation of survey results showing how confident administration is in establishing partnerships.

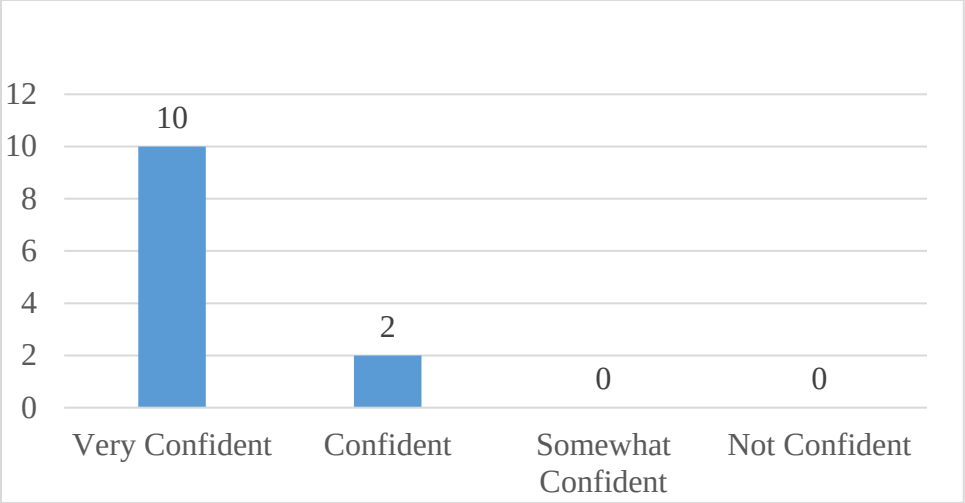

Figure 14. Tabulation of survey results on how confident administration is about conducting on-the-job training.

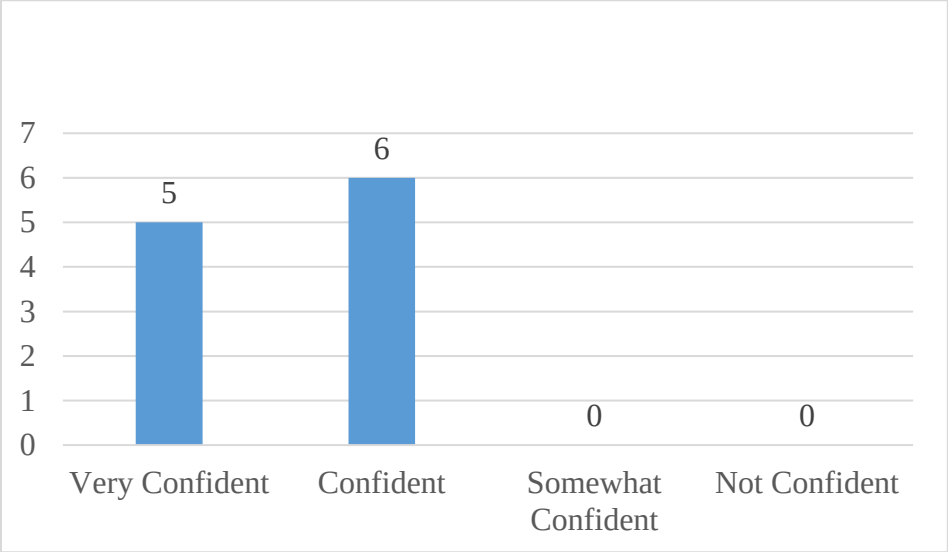

Figure 15. Tabulation of survey results on how confident administration is about integrating industry requirements into the curriculum.

From these findings, one can say that the administration has a high degree of confidence in establishing partnerships and conducting OJTs. These assumed influences are validated. However, the confidence in the ability to integrate industry requirements is not as high as establishing partnerships or conducting OJTs. Therefore this assumed influence is partially validated.

Mood About the Partnerships, Integrating Industry Requirements, and OJT

The administration feels positive about its partnerships. Fr. Dindo mentioned that the partnerships they have established makes them feel proud because their partners are the best in their fields:

> Look at the line-up of our partners- Porsche, Bosch, they are the top companies in their industries. Al-Futtaim is the top in the United Arab Emirates. Our partner Holcim is the leader in cement sales in the Philippines. Toyota and Ford are big companies. Carrier has the largest share in air-conditioning in the country. Shoe Mart and Jollibee are top corporations in the Philippines. They all believe in Don Bosco.

Shop head Ramon described the partners as " the saviors of the students because they give our students hope for a better life, they are like a wall that we can constantly lean on for support. " Shop head Lawrence declared that the partners help raise vocational education in Don Bosco to the highest level, patterned after the German system of dual training. Overall, the feeling and the mood towards these partnerships is positive.

The following responses to the survey shows how the administration views its partnerships:

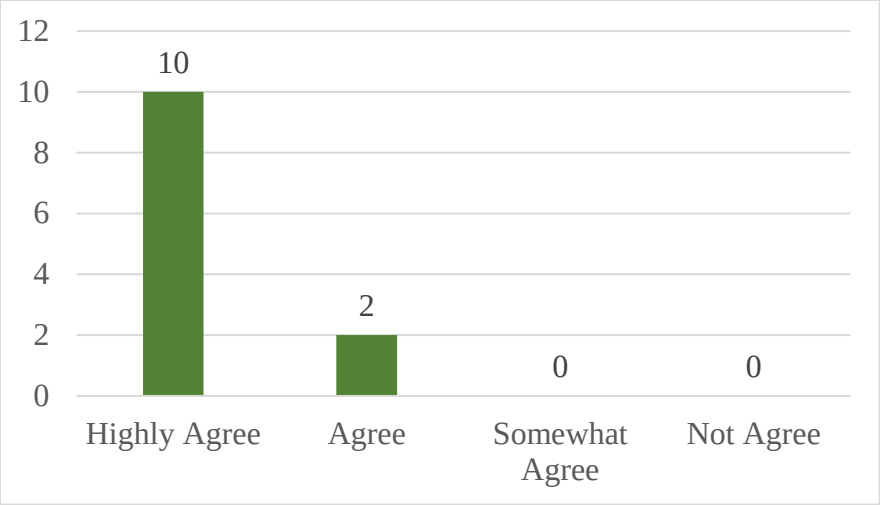

Figure 17. Agreement of the administration with the statement "On-the-job training is essential to the employability of our graduates."

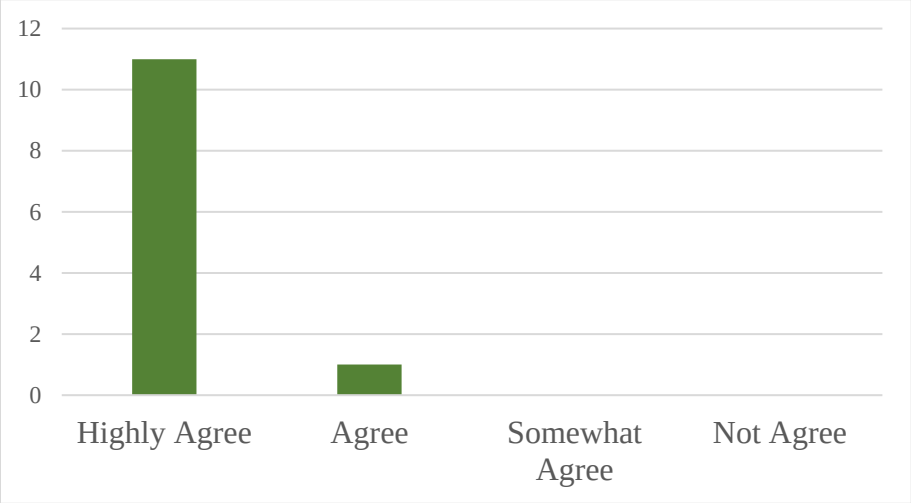

Figure 16. Agreement of the administration with the statement "Our industry partners have contributed greatly to the employability of our graduates"

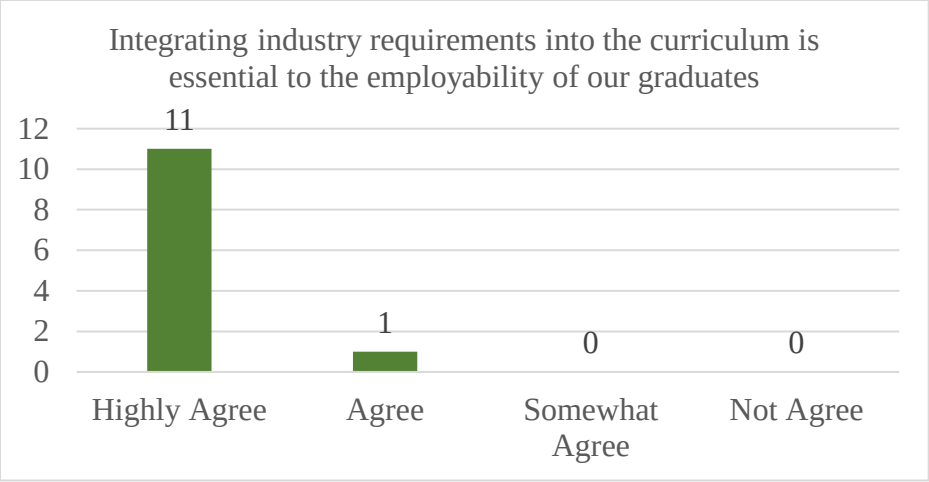

Figure 18. Agreement of the administration with the statement "Integrating industry requirements into the curriculum is essential to the employability of our graduates"

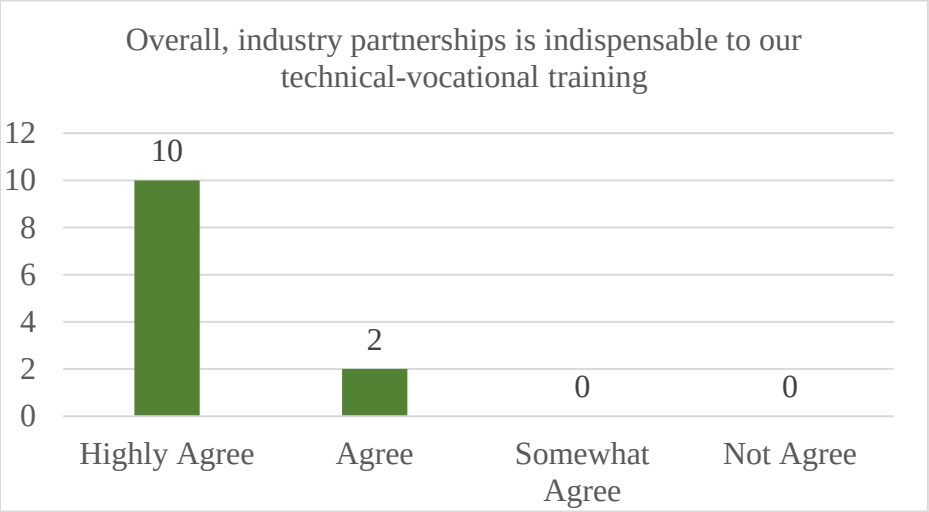

Figure 19. Extent of agreement by the administration with the statement "Overall, industry partnerships is indispensable to our technical-vocational training"

The responses to the survey show that there is an overall positive mood towards the industry partners, and this has given the administration additional motivation to pursue these partnerships. The administration views the partnerships and the work that they do as essential, indispensable, and contributing greatly to the employability of its graduates. The mood towards partnerships, the effort to integrate industry requirements into the curriculum, and OJT are all validated to be assets to the organization.

Summary of Motivational Findings

There were twelve motivational influences that were investigated, and all of these except one were validated by the interviews, survey, document analysis, and observation to be assets to the organization. The administration values the different aspects of their partnerships with industry, and this includes embedding industry needs into the curriculum, collaborating on instruction, generating support for scholarships, and training students in the workplace. The administration is confident about their ability to perform these tasks, except that the confidence in integrating industry requirements into the curriculum is not as strong as the other tasks. Overall, there is a positive mood and outlook towards the work that they do with industry.

Results and Findings for Organizational Influences

The following section presents the results and findings for the assumed organizational influences gathered from the interviews, documents, and observations. There were two assumed influences on policies and processes, and three covering culture. The two assumed influences on policies and processes were discovered not to be assets to the organization, while the three influences on culture (mission, reputation, and work ethics) were validated to be assets. There were four discovered assets namely: network of alumni, dynamic leader, separate and autonomous unit, and fully-engaged partners. These assumed influences and discovered assets

are summarized in Table 14. Each of these assets will be discussed in detail in the following section.

Table 14

Findings on Organizational Influences

Policies & Processes	Validated
The administration has clear training standards which are consistent with national and international standards	no
The administration aligns its programs with the Philippine Qualifications Reference Framework to allow mobility across educational systems and between ASEAN countries	no
Culture	
The administration has established a reputation for producing graduates who possess the appropriate skills required by industry	yes
The administration decisions are influenced by Don Bosco's Salesian mission of helping the underserved youth gain employment through technical education	yes
The administration instills work ethic among its students	yes
Discovered Assets	
Network of Alumni	
Dynamic Leader	
Separate, autonomous unit	
Fully engaged partners	

Clear Training Standards Consistent with National Standards

As discussed in the section on knowledge of program standards of government and international governing bodies under knowledge findings, the administration observes the national standards as contained in the training regulations. In fact, the administration goes over and above the national standards. However, the national standards are seen as minimum standards that must be complied with and are not seen as an asset that strengthens partnerships. This assumed organizational influence is not an asset.

The Administration Aligns its Programs with the Philippines Qualifications Framework (PQF)

The Philippines Qualifications Framework (PQF) describes the levels of educational qualifications and the standard outcomes for each level. It was established through Executive Order No. 83 Series of 2012 and signed by then-President Benigno S. Aquino III. The PQF provides for eight levels of education, the lowest five of which cover the technical and vocational programs under TESDA (TESDA, 2012). The PQF was designed to 1.) set the national standards for each level of education, 2.) provide pathways for students who wanted to move from technical-vocational to higher education, and 3.) support the mobility of workers among different countries with equivalent qualifications frameworks (TESDA, 2012) . The PQF is shown in Figure 19.

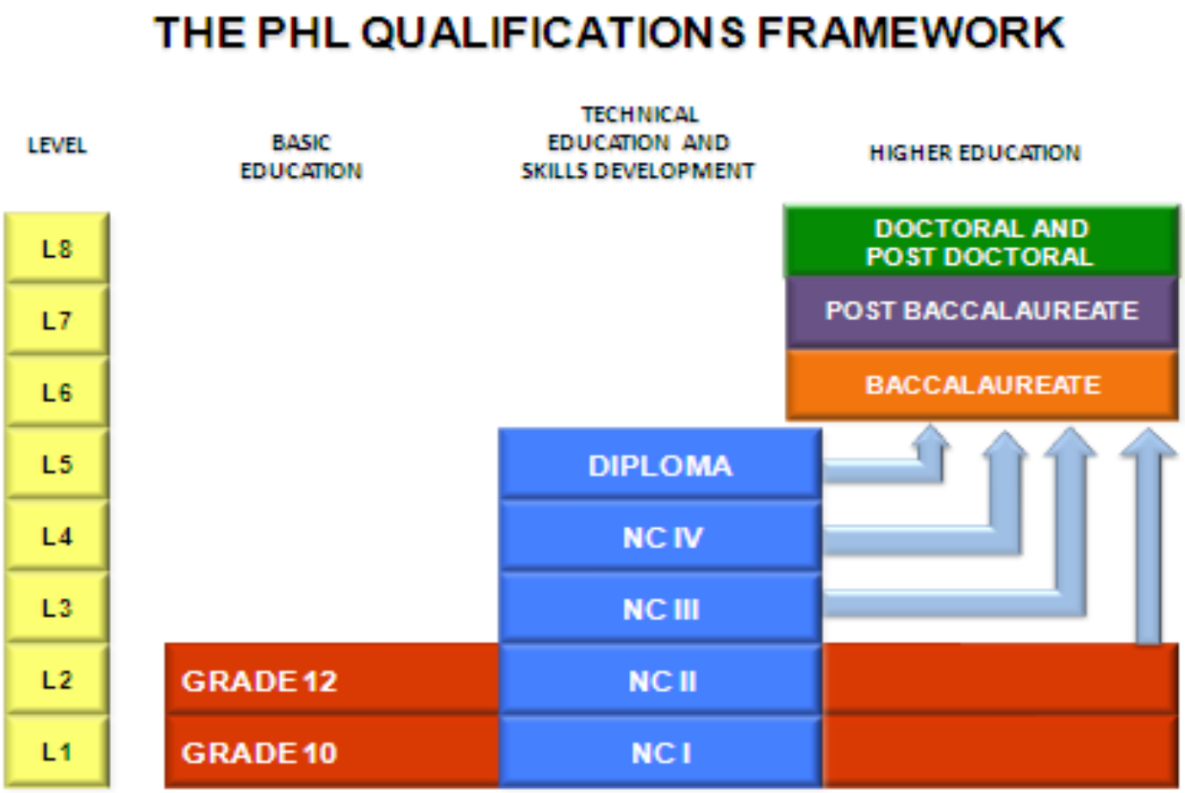

Figure 20. The Philippines Qualifications Framework

TESDA's qualifications are aligned with the Philippine Qualifications Framework, and are indicated by the blue bars in Figure 19. Don Bosco follows the standards of TESDA so Don Bosco's programs are aligned with the PQF. The program designations of Don Bosco denoted by NC I, NC II, or III refer to levels 1, 2, and 3 of the PQF. However, the PQF was never once mentioned as having an impact on establishing partnerships, nor on improving the employability of the students, therefore alignment with the PQF is not an asset.

Reputation

As discussed in the section on knowledge of how to secure partnerships, it was discovered that it was Don Bosco's reputation for producing top-quality technical skills that made companies come to Don Bosco for partnerships. The reputation of Don Bosco is exceptionally strong in the automotive sector. All of the major automotive companies except two

have already partnered with Don Bosco and are either providing scholarships or on-the-job training opportunities to students, most of which result in employment with these companies. At Toyota, for example, shop head Robert and Alvin estimate that between 50 to 80% of technical crew in automotive service centers are Don Bosco graduates. The reputation for producing graduates with excellent technical skills is an asset.

Mission

In a news article in Business Mirror, Don Bosco was featured with the caption "Turning the less fortunate into competitive technicians." The article describes how Don Bosco has helped the less fortunate and the out-of-school youth rise from destitution and turn them into productive technicians with promising and decent employment. Indeed, it has been Don Bosco's mission to help the less fortunate among the youth enjoy a productive life through technical skills education. Their mission is encapsulated in the phrase "Forming good Christians and upright citizens."

The mission of Don Bosco follows the mission of St. John Bosco and the Salesians world-wide to help the underprivileged youth. St. John Bosco dedicated his whole life to helping street children, juvenile delinquents, and other less fortunate boys gain a decent livelihood by teaching them to be artisans and setting them up to be apprentices with employers. Don Bosco Mondo, the non-profit organization based in Germany and the CSR arm of the Salesians, declares its mission as:

> In close partnership with the worldwide community of the Salesians of Don Bosco, we commit ourselves to supporting disadvantaged children and adolescents from poorer population groups. We support them in developing their physical, mental, and emotional qualities to grow up as independent personalities (Don Bosco Mondo, 2018)

The mission started by St. John Bosco continues to this day in the works of Don Bosco TVET center. The scholarships they provide to underprivileged youth and the partnerships it has with industry for apprenticeships and employment are patterned after what St. John Bosco started centuries ago. "For us, it is all about our mission," declared Fr. Dindo. "We are a non-profit school, and our mission and vision are to provide good education and good employment."

The mission of Don Bosco motivates the administration to pursue its alliances with industry and to continue to seek support for the scholarships of its students. The mission of Don Bosco provides a sense of shared purpose and shared values that drive the strategies to build partnerships. The mission has been relevant for St. John Bosco centuries ago; the mission is still relevant today. The mission of Don Bosco is an asset.

Values, Ethics, and Attitude

Unesco views the role of TVET to be educating the whole person and not just the worker. Skills development should take on a more holistic approach by not only developing skills but also by inculcating a sense of values, ethics, and attitudes so that the learner is prepared not only for employment but employability and responsible citizenship (Unesco Unevoc, 2015). The shop heads echo this view of TVET education. Shop head Robert emphasized that values and behavior are important and particularly cited honesty, punctuality, and concern for the company as being essential. He mentioned that companies even place a greater weight on values when they hire their graduates, as skills could be further developed when the graduates are in the workplace. Shop head Johnny agrees on the importance of attitude. He has observed that from his more than twenty years of experience with their students and his relations with colleagues that those with a right attitude are those who end up being successful.

The Assistant Technical Director believes that good values and attitudes are the reasons why the employers absorb about 98% of their graduates into their workforce. He mentions that they integrate work ethics into their training. For example, students are taught to be punctual. With three instances of tardiness, the parents are called in, with five they are removed from the program. The student activities coordinator adds that the weekly masses, the monthly Educative Pastoral Council mass, and the weekly outreach to the home for the aged help inculcate good values and attitudes to the students.

The importance that the administration puts on attitudes and values, and the indications that employers value the attitude of Don Bosco graduates, reveal that the administration of Don Bosco inculcate the right work ethic among its graduates and is an asset to the administration.

Network of Alumni

A strength of Don Bosco is that is has alumni working in industry who have a hand in recruiting students for OJT placements or employment, or who refer their employers to Don Bosco. It was discovered in the section on knowledge of networks of businesses and non-government organizations that it is actually the network of alumni of Don Bosco that has helped them establish partnerships. Fr. Dindo described alumni as “our ambassadors.” Shop head Robert explained that a benefit of graduates working in industry is that they come back looking for students. He cited as an example a graduate who was working in Volvo and who approached him to ask for OJT students. He added that more than 50% of technical crew of automotive service center in Metro Manila are Don Bosco graduates. Shop head Jack commented that at times, alumni and students network among themselves for OJT and employment opportunities. The network of alumni is a discovered asset for Don Bosco.

Dynamic Leader

The transformation and significant milestones that Don Bosco has achieved in recent years may be attributed in large part to its dynamic and youthful leader, its Technical Director- Fr. Jose Dindo Vitug. Under Fr. Dindo, the school was able to construct a new building worth 300 million pesos to house the TVET Center. The significant partnerships with Ford, Holcim, PTRCA, Al- Futtaim, Bosch and many more were cemented during the leadership of Fr. Dindo. Fr. Dindo took over as technical director in 2010, and by 2013, the TVET Center was financially sustainable.

Fr. Dindo is not the typical priest in that he approaches his work much like a 21st-century business leader. He talked about the need at the time he came in to change the organizational culture, to change the mindset of the people. Fr. Dindo narrated:

> I was very much involved with the organizational structure at the start, I had to change people and move around others. I had to place people where they can be optimized. For me, changing the mindset of people was the most difficult to achieve. It is priceless.

He took an active role in curriculum design and development, and in establishing partnerships. Fr. Dindo discussed the need to be open to the needs of industry partners and be adaptable, to be innovative, and entrepreneurial. He adopts an attitude of openness towards partners. He credited this ability to his education.

> I am privileged to have the chance to get associate degrees in Germany and Singapore. I was also able to finish my doctorate in Education Management and Leadership. This has given me the ability to adapt, to think outside the box.

Don Bosco has a dynamic leader in Fr. Jose "Dindo" Vitug. The leader of the Don Bosco TVET Center was found to be an asset to the organization.

A Separate, Autonomous Unit Focused on Developing the TVET Programs

The TVET department allows Don Bosco to focus entirely on developing and growing the TVET programs and allows it to cater to a distinct student population. Figure 13 shows how Don Bosco Technical Institute, Makati is structured. There are three departments in the Education division- Elementary, High School, and the TVET department. The Education division is supported by the Student Services, Pastoral Ministry, and the Administrative Services. All of these divisions report to the Office of the Rector, which in turn reports to the Board of Trustees.

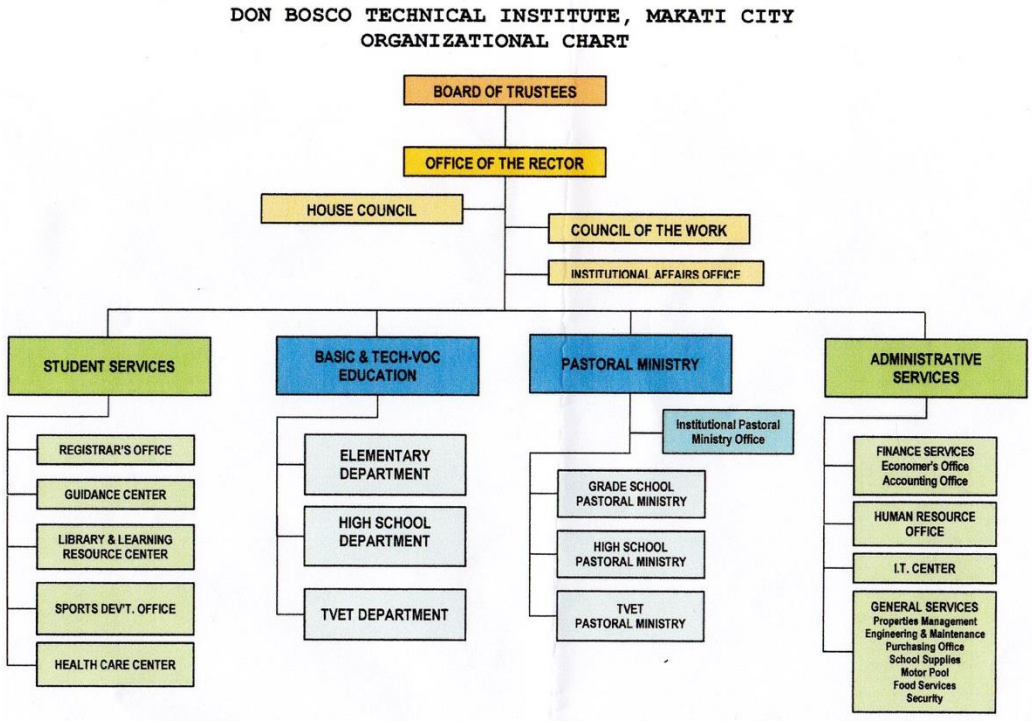

Figure 21. Organizational Structure of Don Bosco Technical Institute, Makati

The TVET department is also called the Don Bosco TVET Center, headed by Fr. Dindo. By having a department in the Education division that is focused entirely on providing technical and vocational education, Don Bosco can provide the necessary focus that TVET needs to grow and be self-sustaining. By being separated from the more affluent elementary and high school

students, the TVET Center can cater to the students it was designed to serve- the poor and out-of-school youth.

The TVET Center also has the necessary organization to run as an autonomous unit, apart from the functions of finance and student services lodged with Don Bosco Technical Institute. Figure 22 shows the organization of the TVET Center. Fr. Dindo clarified that the TVET Center can make the decisions on memorandum of agreements, budgets, and resource allocations, which are essential to companies and donors as they only need to deal with the TVET Center for the implementation of their agreements. Having a separate, autonomous unit focused on developing the TVET programs is a discovered asset for Don Bosco.

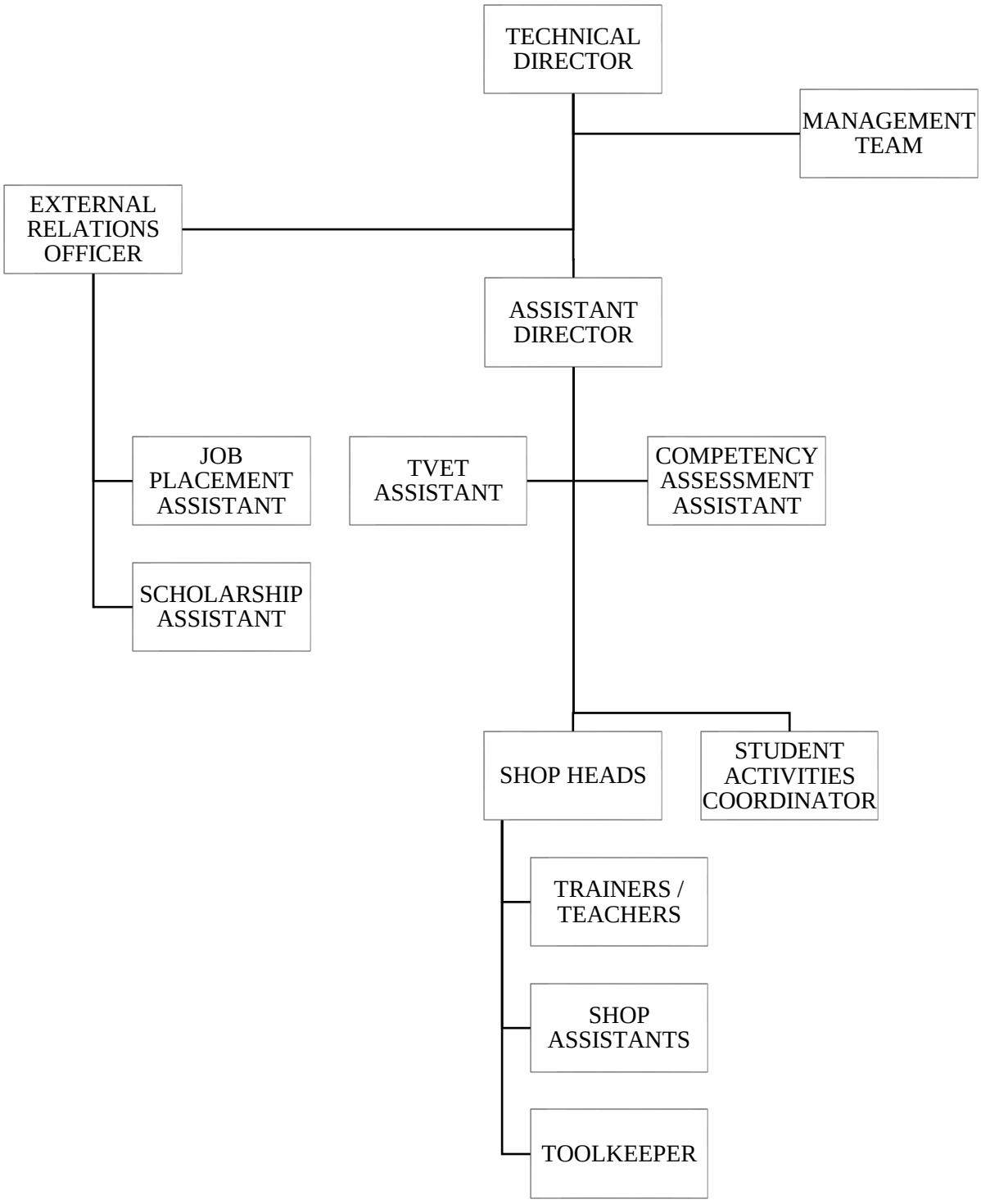

Figure 22. Don Bosco Technical Institute of Makati, INC., TVET Center Organizational Chart

Fully-engaged Partners

Another discovered asset of Don Bosco is that they have partners who are fully engaged in the whole process of the training from enrollment to employment. They are involved in the provision of scholarships for those financially in need, to collaboration with the school on curriculum and instruction, to OJT placements, and then finally to employment. They partner with Don Bosco with the aim of participating in the development of the student from the very start, so that when the students graduate they would be ready for employment. Examples of partners who are fully engaged from enrollment to employment are Toyota, PTRCA, Holcim, Al-Futtaim, and Carrier Air-conditioning.

The partnership with PTRCA is a model that may be emulated. According to shop head Lawrence, the shop head for the PTRCA program, PTRCA provides scholarships to 40 to 60 students every cohort with the goal of hiring these students upon graduation as mechatronics technicians in any of Porsche's service centers. These students are pre-selected from the batch of students who have successfully passed the admissions process at Don Bosco. Porsche is involved in developing the curriculum for the program, and in fact uses a specialized PTRCA curriculum for the second year of the training. During the second year of the training, it is Porsche's trainers who conduct the training. PTRCA provides the facilities that are needed in the training, and also sends Don Bosco faculty for specific brand training. Students do practical work in Porsche service centers as OJT trainees, and those who successfully complete the program are hired in any of Porsche's dealers worldwide.

This kind of partnership with PTRCA is replicated in some ways with their other partners mentioned above. Having fully-engaged partners is a discovered asset of Don Bosco.

Summary of Organizational Findings

There were five organizational influences that were investigated, two relating to national and international standards, and three relating to culture. The two influences relating to standards were discovered to be unrelated to the administration's ability to secure partnerships. While Don Bosco follows national standards, and the national standards are aligned with international standards, these standards are subordinate to the needs of industry. As far as the partnerships are concerned, it is the needs of industry that are more important and should be served. The reputation of Don Bosco for producing graduates with excellent technical skills; the mission of helping the underserved youth; and the administration's ability to instill good values, attitudes, and work ethic; are all validated to be assets to the organization.

There were important assets that were discovered in the course of the research, and these are Don Bosco' network of alumni, the separate and autonomous unit focused on TVET, fully-engaged partners, and the leadership of Fr. Dindo.

Conclusion

There were a total of 33 assumed influences investigated, out of which 26 were validated to be assets, two were partially validated, and six were discovered to be not assets to the administration. However, five additional assets were discovered during the investigation. A total of 33 knowledge, motivational, and organizational assets have enabled Don Bosco to achieve its stakeholder goal of industry partnerships. The KMO assets could be clustered into six key areas of the partnerships and these are 1.) partnership development; 2.) scholarships; 3.) curriculum development; 4.) instructional Support; 5.) OJT; and 6.) graduates.

There are eight KMO assets related to partnership development; four assets on scholarship; six assets on curriculum development; two on instructional support; four on OJT;

and five on graduates. There are three other assets on leadership, organization, and mission. The assets are clustered according to these areas in Table 15. Chapter Five will then provide solutions and ideas how these six key areas of industry partnerships may be developed by other organizations seeking to establish TVET programs.

Table 15

Knowledge, Motivation, Organizational Assets of Don Bosco Clustered by Areas

	Knowledge	Motivation	Organization
Partnership Development	The administration understands the relationship between partnerships and employability of its graduates	The administration is confident in its ability to build its partnerships	Fully engaged partners
	The administration knows how to secure and nurture partnerships with industry and non-government organizations	The administration feels positive about its partnerships with industry and non-government organizations	
	The administration knows how to establish goals about its partnerships and develop strategies to achieve those partnerships		
	The administration knows how to monitor its relationships with its partners		
	The administration knows how to reflect on its relationships with partners and identify areas for improvement		

Table 15, continued

	Knowledge	Motivation	Organization
Scholarships	The administration knows how to secure funding support for its scholarships	The administration values scholarships and OJT provided by its partners The administration is confident in its ability to secure support from partners for scholarships The administration feels positive about getting support from industry for scholarships	
Curriculum	The administrations knows the relationship between integrating industry requirements into the curriculum and employability of its graduates	The administration values the integration of industry requirements into its curriculum	Work Ethic, Values & Attitude
	The administration knows how to integrate the skills required by industry partners into its curriculum	The administration feels positive about the integration of industry requirements into its curriculum	
Instructional Delivery	The administration knows how to collaborate with industry in the development of training equipment and facilities	The administration values collaboration with industry on the development of training equipment and facilities	

Table 15, continued

	Knowledge	Motivation	Organization
OJT	The administration understands the relationship between OJT employability of its graduates	The administration is confident in its ability to secure support from partners for OJT	
	The administration knows how to conduct OJT with industry partners	The administration feels positive about getting support from industry OJT	
Graduates	The administration knows how to produce graduates who possess skills that matches the needs of its industry partners	The administration values its ability to supply industry partners with human resources who possess the relevant skills	Reputation
		The administration is confident in its ability to produce graduates who have the skills needed by industry	Network of alumni in Industry
			Don Bosco Mission Separate Autonomous Unit
			Innovative Leader

CHAPTER FIVE: RECOMMENDATIONS, IMPLEMENTATION PLANS AND EVALUATION PLANS

Don Bosco is a high-performing school in TVET, having achieved 100% employability for its graduates. A crucial feature in Don Bosco's educational system that contributed to this employability rate is the partnerships that the administration has built with industry and business organizations. This study sought to answer the following research questions:

1. What knowledge, motivational, and organizational assets does the administration have that allowed it to achieve its stakeholder goal of securing and developing over 100 partnerships with industry, which has been essential to the achievement of the organization's overall goal of employability?
2. What knowledge, motivational, and organizational assets may be developed by other schools seeking to establish or expand its own technical-vocational programs?

Chapter Four answered the first question, validating the list of assumed knowledge, motivation, and organizational influences that were posed at the beginning of the study, and identifying from among these a list of assets validated by the research findings, as well as assets discovered during the course of the study. Chapter Five seeks to propose recommendations to technical-vocational schools that are planning to establish or expand its own school partnerships, in light of the promising practices or assets that were found in Don Bosco

Assets that May be Adapted by Other Technical-Vocational Schools

The knowledge, motivation, and organizational assets of Don Bosco clustered around six key aspects of the partnerships: partnership development, scholarships, curriculum development, instructional support, OJT, and employment. Each of these aspects of the partnerships must be addressed by any school wanting to establish or expand its partnerships.

Partnership Development

"Linkage with Employment Is the Single Most Important Factor in Training Success" (Johanson & Bonto, 2009, p.51). At Don Bosco, new partners are constantly being developed, and this ability stems from the administration's knowledge of partnership development, their network of alumni, and the confidence they have developed through decades of partnering with businesses. Don Bosco has established a reputation for producing graduates with the right technical skills, and this reputation attracts industry to partner with them on the training and development of skilled workers, further enhancing their ability to produce graduates with the right skills.

Scholarships

In many countries, TVET by default caters to students from low-income families as students from the more affluent families aspire for higher education degrees (Johanson & Bonto, 2009).

> TVET has then been associated historically with those classes of society who have to work for a living and who do not partake of the kind of education fit for the gentry, even if the greatest experience and ability is required in order to practice an occupation (Unesco- Unevoc, 2013, p. 93).

Because the market for TVET is low-income families, it is imperative that students be given financial support to help defray the cost of education. Spreading the cost among stakeholders to involve employers opens up more opportunities for the youth to enroll in TVET, and make employers more invested in building the students' skills and employing them when they graduate (Mourshed et al., 2012). At Don Bosco, it has been their mission to provide training opportunities to students from low-income families. Therefore, scholarship support from donors

and partner companies has been a central feature of its education system, to the extent that more than 50% of its students are funded through scholarships. Four of the validated assets of the administration cluster around the knowledge and motivation to secure scholarship support from its partners.

Curriculum Development

Curriculum development involves both the identification and anticipation of labor market skills needs, and the integration of these skills needs into the curriculum. Don Bosco is able to identify the skills needs of industry through its close interaction with its partners, the OJT feedback sessions with students, visits by company representatives to the school, immersions and trainings of teachers and shop heads in the companies, and graduate tracer studies. The skills needs identified through these activities are integrated into the program by updating the lesson plans, offering additional modules to cover new competencies, or bundling different government-approved programs into one offering. Employers could also influence curricula by providing opportunities for teachers to visit and work in industries and businesses, lending employees as teachers in the classrooms, and creating work experiences for students (Wang, 2012). Fr. Dindo expressed the view that industry is market driven, innovative, and always on-the-go and that academe should keep pace and equally be market driven.

OJT/ Apprenticeships

On-the-job training (OJT), apprenticeships, or workplace training all mean the provision of practical, hands-on training for students in the workplace. OJT is probably the most important and direct link to employment that a student could have during his training. Employers commonly report a lack of practical experience among graduates, but it is really only in the workplace where students can gain this practical experience (Klosters, 2014). An OJT provides

students the opportunity to gain this practical experience and useful work-related skills (Klosters, 2014). OJT and apprenticeships is one of the most effective models of training that bridges the transition from school to work. OJTs not only give the students practical, hands-on training, but also builds the confidence of the employer in the potential worker (Wang, 2012). At Don Bosco, OJTs are the stepping board of the students to employment. Don Bosco has four validated assets in this area.

Instructional Support

Partnerships with industry offer an excellent opportunity for teacher development and provision of training equipment. Industry- school partnerships provide access to the resources of businesses that schools could not provide. These resources include industry-standard and even brand-specific training equipment and expertise of personnel (Flynn et al., 2016). Shop heads of Don Bosco mentioned that their faculty has regular opportunities to attend training programs held by partner companies on new technologies and product offerings. Don Bosco has the latest and industry-standard training equipment, fully paid for by partner companies. In Australia, the Gateway Schools Network Program which partnered schools to various industries had teachers saying they benefitted from an industry-specific contextualization of the science curriculum (Flynn et al., 2016). Learning is enriched if employers engaged with schools in skills training.

Employment

The ultimate goal of school and industry partnerships is to produce graduates who possess skills that are required by industry so that these graduates become highly employable. As seen in Don Bosco's experience, the collaboration between the school and industry in all aspects of the training from scholarships to curriculum development, instructional support, and OJTs, produce graduates who possess the right skills required by industry. Don Bosco's graduates all

go on to be employed, with 90% of them hired by the companies where they do their OJTs. Countries that maintain a dual apprenticeship system exhibits smoother school to work transition, lower NEET rates, and lower youth unemployment rates (Biavaschi et al., 2012). Good TVET education systems produce graduates who go on to enjoy high wages and good prospects in the labor market (Cedefop, 2014), and Don Bosco's education system indeed is one of them.

A Partnership Framework

Don Bosco's experience with partnerships points to a framework that can be used by other schools as a guide. Partnerships can be thought of as having three phases: partnership development, collaboration, and outcome. The first phase- partnership development, mainly involves the work of the administration securing new alliances and renewing current ones. The second phase of the partnership is the collaboration effort to deliver more relevant training. This collaboration work includes: scholarships, curriculum development, instructional support, and on-the-of job training. The third phase of the collaboration is the outcome itself- the graduates who possess the skills needed by industry. These are all driven by the school leadership. The diagram in Figure 21 depicts how all these elements come together.

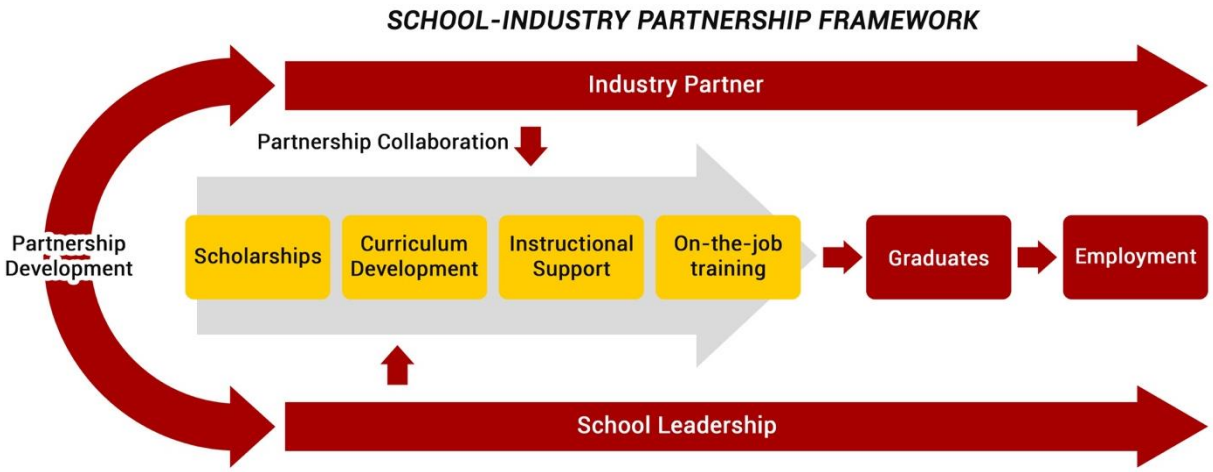

Figure 23. A School- Industry Partnership Framework

Don Bosco has several partners that assist the school in some form in any of these areas. Some partners provide scholarship assistance to students, leaving the training of the students up to the school. Some partners are involved only for OJT and possible employment later. Some partners assist with instructional support, such as providing equipment for the hands-on training of the students.

The more successful partnerships, however, are those involved along the entire breadth of the training- scholarship; curriculum development; instructional support; and OJT. Companies who are engaged in all four areas, and are involved deeply, are those companies which are best able to maximize the talent that comes out of the training. In the case of Don Bosco, companies such as Porsche, Holcim, Ford, Toyota, Bosch are the companies who benefit from a well-trained graduate and thus secure a pipeline for their workforce needs. They benefit from higher productivity as a result of a better-trained workforce. It is not so much the quantity of the partnerships that matter, but the quality of the tie-ups that matter. Fr. Dindo expressed his thoughts on this.

> There are companies whom we call our premium partners because they put a lot on the table. They invest a lot. They give scholarships, train our teachers, and donate equipment. These are the partners we prioritize.

Recommendations and Strategies

The recommendations presented herein discusses how schools aspiring to establish industry partnerships may realize each of the elements of the framework in Figure 20. Each strategy includes an implementation plan and an evaluation plan. The evaluation plans are based on the four levels of evaluation recommended by Kirkpatrick and Kirkpatrick (2006): reaction, learning, behavior, and impact. The first level of evaluation measures the reaction of participants or stakeholders to the program. It is a measure of customer satisfaction. The second level measures the learning that participants gain from a program as shown by a change in attitude, or improvements in knowledge and skill. The third level measures changes in behavior as a result of the intervention or program. The fourth level of evaluation is the impact or the results of the intervention measured in terms of concrete indicators such as improved quality, higher revenues, reduced costs, better profits, and higher productivity (Kirkpatrick & Kirkpatrick, 2006).

The strategies proposed are:

1. Organize a unit that is focused only on the provision of technical and vocational programs- a TVET center;
2. Develop industry-specific or location-specific programs and build the relevant partnerships;
3. Establish scholarship programs that can be funded by partners and other organizations;
4. Formulate industry-relevant curricula and a mechanism to respond to the changing requirements of industry;

5. Identify areas of development for training equipment and teacher capacities;
6. Design on-the-job training programs that rotate students through the relevant areas of operation in the company and that furnishes students with the applicable skills;

Each of these strategies will be discussed in the following sections, together with an implementation plan and an evaluation plan.

Organize a Unit Focused on the Provision of Technical- Vocational Programs

Don Bosco's strength is that it has a unit that is focused entirely on the provision of technical- vocational programs. This unit can devote time and attention to the development of the programs, the partnerships, and the students. It can make decisions on goals, strategies, budget allocations, and partnership agreements without being encumbered by bureaucratic requirements. The leadership of the unit is also able to make commitments to the partners so that partners need only to deal with its leadership. A group with the same level of responsibility and autonomy would be essential to the growth and development of the technical and vocational programs.

Implementation plan. To set up a new unit focused solely on technical-vocational programs, an assessment must be made of the current organization, and an organizational plan designed based on the assessment. The organizational plan must include the key deliverables of the unit, the authority levels of its leaders, and the organizational structure. Moreover, the reporting relationships to the parent organization must also be defined. It may be necessary to secure approvals from a higher management body on this, such as the board of trustees.

When the necessary approvals are secured, then hiring should commence. The TVET head should be appointed, followed by the key leaders in the organization so that all initial work can already be carried out and decisions made by the management team. Assuming there is no physical facilities and permits yet, other vital tasks such as the construction of the physical

facilities and acquisition of the necessary permits to offer the programs should begin. Table 16 shows the timeline for creating the separate TVET unit.

Table 16

Implementation Plan for Organizing a Unit Focused on TVET

Action	Responsible Person	Timeframe
Establish the organizational plan for the TVET unit including responsibilities and authority levels	Project Head	0 to 6th month
Identify relationship of the TVET unit to the rest of the organization	Project Head	0 to 6th month
Secure approval from the board for the organizational plan	Management Team	7th to 8th month
Hire officers, teachers, and personnel needed	TVET Head/ Human Resources Department	8th to 12th month
Define and set-up facilities requirements for offices, classrooms, and laboratories	TVET Head/ Human Resources Department	8th to 20th month
Secure approval from Government Regulatory Body for the offering of the programs	TVET Head/ Government Liaison	8th to 20th month
Start offering programs	TVET Unit	21st month

Evaluation Plan. The creation of a separate unit to focus on technical- vocational programs should elicit the following behaviors: faster decision-making, responsiveness to opportunities, and responsibility for the financial well-being of the group. As the management team builds the program offering and industry partnerships, decisions on crucial tasks and any opportunities that may arise are done faster. A deeper understanding of the business ensues with the focus and attention of the team. Budgetary decisions and accountability rest entirely on the leaders of the unit.

The overall impact desired from the recommendation to establish a separate unit is for the time-to-market, or the time from planning and conceptualization of new programs to execution, to be shorter. It is also intended to produce better quality training programs. Lastly, the educational and business objectives such as enrollment and profitability should be achieved. The evaluation plan is shown in Table 17.

Table 17

Evaluation Plan for Organizing a Separate Unit for TVET

Intervention proposed	(Level 1)- Reaction	(Level 2)- Learning	(Level 3)- Behavior	(Level 4)- Impact
Create a separate TVET unit that is focused on developing and offering technical and vocational programs			Focus on developing technical and vocational programs separate from tertiary and k-12 education	Time to market- speed of conceptualization of programs to implementation
			Autonomy and freedom to decide on matters relating to vocational education	Quality of educational and training programs
			Administration responsible for handling its own operating and capital expenditure budget, and profit and loss	Profitability of unit

Develop Industry-Specific Partnerships

Don Bosco focuses on critical industries and developed the best programs that would serve those industries. It is the top provider now of skills in the automotive service sector in the country. It has focused its programs also on servicing the refrigeration and air-conditioning industry, and the shipping business. Aspiring TVET providers may focus on other sectors which have a significant need for skilled human resources such as tourism, information technology such as animation and coding, business process outsourcing in the fields of engineering and accountancy, and construction.

Factors to consider in selecting the industry are:

1. Size of the workforce requirement of the industry;
2. The projected increase in the workforce;
3. Size and growth of the industry in revenues;
4. Strategic fit with the school;
5. The location of the companies from the school;
6. How the current workforce demands are supplied

Implementation Plan. The initial efforts to look for partner companies should be made by the leadership of the organization so that opportunities may be responded to and decided quickly. Selection of the industry is crucial as this will determine the direction of the programs to be offered. The benefits to the stakeholders achieved by collaboration must be communicated to prospective partners. Once the industry is selected, partner companies may be identified and approached. It is essential to get employers on-board during the design of the programs so that the inputs of the industry are considered at the onset. A new school may lack the level of reputation and track record that Don Bosco had and so more effort must be exerted on the work

of approaching partners. Over time, as the school gains more experience and reputation, it is expected that partnership development will be an easier task. Schools may also consider partnering at the industry level through business and professional organizations or trade associations. The implementation timeline is shown in Table 18.

Table 18

Implementation Plan for Developing Industry-specific Partnerships

Action	Responsible Person	Timeframe
Identify industries that have needs for skilled personnel based on chosen criteria	TVET Head	0 to 3rd month
Study the industry requirements- read articles, talk with people in the industry		
Work with industry associations, especially those with industry-academe collaboration programs		
Find companies in the identified industries who may be willing to partner with the school		3rd to 6th month
Present a partnership proposal with the potential partner companies	TVET Head	7th to 9th months
Quantify industry benefits: improved workforce skills, lower training costs, higher productivity, enhanced competitiveness		
School Benefits: more relevant training, higher enrollments		
Student benefits: higher employability		
Draft partnership agreement detailing the responsibilities of the parties to the agreement	TVET Head	9th to 12th months
Secure initial agreements with partner companies	School Head	9th to 24th months

Evaluation plan. To evaluate whether industry partners are receptive to the proposal of collaborating on offering technical-vocational programs, a survey of prospective partners to determine their need, interest, and attitude may be conducted. Behavioral indicators are

industry's involvement in shaping the partnership, or the support they commit to the program. The impact of this initiative will be evident when the TVET center provides the skills industry needs and when graduates are hired by the companies to fulfill their workforce requirements.

Table 19

Evaluation Plan for Developing Industry-specific Partnerships

Intervention proposed	(Level 1)-Reaction	(Level 2)-Learning	(Level 3)-Behavior	(Level 4)-Impact
Develop industry-specific partnerships (i.e. Tourism, Information Technology, Construction, Shipping, Building Maintenance, Solar Power Installation and maintenance)	Employer satisfaction survey		Industry provides full support to the TVET Center	The TVET Center produces skilled graduates that are immediately employed by the industry
	Student satisfaction survey		Industry provide scholarship support to students	The TVET Center is able to secure funding support from potential employers for the enrollment of its students
	Initial participation of employers, students, and community		Industry engage in the training of the students	The TVET Center fulfills the labor requirements of the selected industries
			Students persists in their studies	Students enroll in the programs of the TVET Center
			Students are motivated by the prospect of employment	

Establish Scholarship Programs Funded by Partners and Donors

Employers need to realize that when they participate in the costs of the education and training of the youth, their investments in training come back to them in the form of a more productive workforce. As one Siemens executive stated, “people ask us why we invest so much in developing the skills of our people. I asked them instead, how much would it cost not to have skilled workers?” (Mourshed et al., 2012, p. 65). Investment in the scholarships or financial support for students is a necessary outlay in the quest for a more productive workforce.

Implementation Plan. To establish scholarship programs, the operating cost per student should be determined. The operating cost per student will determine how much tuition and fees per student must be charged, which in turn will guide the amounts and types of scholarships that industry partners may support. The scholarship support that will be solicited from industry partners must be presented as an investment by the sponsoring company, and the benefits of higher productivity and better efficiencies should be quantified and presented against the investment. A return on investment measure can be calculated to illustrate what the benefit to the company will be. The school and sponsors may also consider study-now-pay-later schemes since the objective is for the student to be employed by the sponsors, at which time the graduate will already have the capacity to pay the student loans. The implementation timeline is shown in Table 20.

Table 20

Implementation Plan to Establish and Fund Scholarship Programs

Action	Responsible Person	Timeframe
Package full or partial scholarship programs	TVET Head/ Finance Head	0- 12th month
Establish operating costs per student and tuition and fees for each program	Finance Head	0- 12th month
Package scholarships to industry as an investment for a skilled workforce, an employee development program	TVET Head/ Admissions	0- 24th month
Offer study-now-pay later schemes where education is funded by the company but the student pays later when already employed with the company	Finance Head	Continuous

Evaluation plan. To assess whether this intervention gains traction among employers, the reaction to watch for is their willingness to participate as exhibited by pledges or commitment letters. If the interest is there, the school should see that employers are actively involved in designing the scholarship programs, providing inputs that would address their needs. The behavior desired would be for the sponsors to sign and commit to the scholarship agreements. The ultimate impact to be observed from this intervention is that students, especially those from low-income families, enroll and graduate from the skills training program, and eventually gain employment. The scholarship should also be continuing and sustainable over the long-term.

Table 21

Evaluation Plan to Establish and Fund Scholarship Programs

Intervention proposed	(Level 1)-Reaction	(Level 2)-Learning	(Level 3)-Behavior	(Level 4)-Impact
	Submission of pledges by potential donors		Industry participates in designing scholarships	Students from low-income families enroll and complete the programs
Establish and fund scholarship programs			Donors sign long-term scholarship agreements	Students gain employment
			Donors provide funds for the scholarships	Families of students are lifted from poverty

Develop Industry Relevant Curricula and a Mechanism to Respond to Changing Requirements

The best way to have a curriculum that achieves the desired educational outcomes and delivers employer requirements is for the industry and academe to collaborate intensively to define the competencies required (Mourshed et al., 2012). Regular conversations around skills needs will help identify the competencies required, which may be captured and integrated into the curricula. Although industry may not be able to predict future skills requirements, industry knows best which skills they need and which are difficult to find in the labor market (Johanson & Bonto, 2009).

Implementation plan. Opportunities for the industry and academe to get together to define the competencies may be initiated such as through an industry-academe workshop or a coffee or breakfast meeting held on a regular basis. Additionally, information may be generated

on labor market demand and supply through surveys of the labor force and surveys of establishments. Graduate tracer studies are needed to determine the degree of absorption of the graduates into the labor market (Johanson & Bonto, 2009). Interviews with graduates can identify how their skills match up with the needs of the industry and will provide precious information on what the actual work requirements are. Once the required competencies are defined and listed in sufficient detail, these may then be incorporated into the curricula, the learning modules, and lesson materials so that these are delivered in the classrooms.

Table 22

Implementation Plan for Developing Industry Relevant Curricula

Action	Responsible Person	Timeframe
Hold industry- academe workshops to determine skills requirements of industry	TVET Head/ Shop Heads	Continuous
Conduct regular labor market surveys and graduate tracer studies to identify industry needs	Shop Heads	12th- 24th month
Repackage or reorganize government-mandated curricula to address the needs of the industry	Shop Heads	Continuous
Host regular coffee or breakfast sessions with industry to talk about changing requirements	TVET Head/ Shop Heads/ Partners	Continuous

Evaluation plan. Surveys and interviews with employers and students may be conducted to assess their reaction to curricula. The curricula may be shown to the industry partners to know how satisfied they are with the changes in the curricula. Surveys with students may also be done to determine if they understood and appreciated the changes made. Differences in learning could be identified through the tests given by the teachers, and changes in behavior determined through a hands-on demonstration of the skills learned. Additionally, students doing their on-the-job training should be able to demonstrate their proficiencies in the actual workplace. The ultimate

impact of this intervention should be that the skills acquired by the graduates match those that are needed by industry, thereby leading to employment. Employability could be measured through graduate tracer studies.

Table 23

Evaluation Plan for Developing Industry Relevant Curricula

Intervention proposed	(Level 1)-Reaction	(Level 2)-Learning	(Level 3)-Behavior	(Level 4)-Impact
TVET Center and industry to jointly develop a curricula that would address industry needs, and update this on a regular basis	Industry are satisfied with the curricula as indicated by surveys/ interviews	Tests/ examinations conducted by the teachers	Skills demonstration by the students of the competencies learned	Relevance to industry of the skills learned
	Faculty & Students are satisfied with the curricula as indicated by surveys		Demonstration of ability to perform work-specific tasks in the workplace	Labor Market Analysis to determine whether the skills supplied matches the needs of the industry Graduate destination/ tracer studies

Support for Training Equipment and Development of Teacher Capacities

Two areas that industry partners can easily support is the provision of training equipment and development of teacher capacities. Companies would have access to the latest technologies that are being used by the industry and therefore know which equipment is needed for training. They have the best knowledge of the latest tools and testing equipment, and will even have an appreciation of which brands or models are appropriate. Companies usually have replacement

programs, and it would not cost anything for the companies to donate the replaced equipment for training, especially if it is still relevant and useful. Industry partners usually conduct training programs for employees which teachers could join. Training teachers would not cost any additional amounts for the companies, as the teachers will only be occupying vacant seats in an already scheduled training program. As a shop head of Don Bosco said, the training programs that they can attend are numerous, and they only need to make themselves available.

Implementation plan. The need for training equipment and teacher training should follow what is required by the curriculum and the syllabus jointly designed by the industry and the school. The learning objectives for the students should guide it. Even during the design of the curriculum, the specific training equipment that is needed and the types of teacher training could already be identified and included in the budget. The company and the school may consider longer-term immersion programs such as six months so that the faculty could have a deeper understanding of the work expected of the students and the environment in which that work is carried out. Cross-posting may also be considered, wherein a faculty is made to work in the industry say for a period of one or two years, but on the other hand, an industry expert is also made to teach in the school for the same period.

Table 24

Implementation Plan for Support for Training Equipment and Teacher Capacities.

Action	Responsible Person	Timeframe
Identify training equipment requirements and faculty training needs based on curricula	Shop Heads	Continuous
Work out with partner companies what equipment and training they can provide	Shop Heads	0-24th month
Run longer-term (6 months) immersion for faculty	TVET Head	Continuous
Consider cross-posting, industry experts to teach and faculty to work	TVET Head/ Shop Heads	Continuous

Evaluation plan. To determine whether this intervention is achieving its desired effect, teachers should be able to relate what they are teaching in the classroom to the actual conditions in the workplace. Teachers will have a better understanding of their lessons either because of their immersion in the industry or because it is the supervisors in the industry who are teaching in the classroom under a cross-posting arrangement. Better learning could be assessed through student surveys or interviews, or by an observation of the classroom by the supervisor or the shop head. Teachers should also gain a clearer understanding of the competencies that students need to learn.

On the part of the students, having the right equipment in school will give students the opportunities to demonstrate hands-on the skills they have learned. They should be able to acquire and demonstrate the competencies that are needed by industry, and this could be evaluated through their regular assessments, especially the end-of-the-term examinations to obtain the government-recognized certifications.

Table 25

Evaluation Plan for Support for Training Equipment and Teacher Capacities.

Intervention proposed	(Level 1)-Reaction	(Level 2)-Learning	(Level 3)-Behavior	(Level 4)-Impact
	Students learn and enjoy classes		Teachers relate concepts to actual experience	More effective learning for the students
Development of instructional support to include training equipment and teacher capacities	Teachers engage students		Teachers have better understanding of skills and technologies Hands-on learning by the students	Students acquire relevant skills

Enrich the On-the-Job Training (OJT) experience

One thing is clear with apprenticeship or OJT programs- the more time the students spend in the workplace, the more hands-on experience they gain (Mourshed et al., 2012). At Don Bosco, OJT is 960 hours, requiring the students to work full-time for six days a week, for five months. The OJT period gives ample time for the companies to assess whether the students are capable of the job upon graduation. The OJT phase usually leads to employment for the trainee. OJT is crucial to the employability of the trainee, as the close interaction with the industry supervisors for a full five months is the trainee's best chance to demonstrate their skills and attitudes to potential employers.

Implementation plan. The on-the-job training can be enriched with an OJT syllabus, which both the school and industry can define. The OJT syllabus should spell out the learning objectives of the OJT, the activities, the areas where students are to be rotated, and the number of hours students are to spend per area. The OJT syllabus ensures that the trainees maximize the hours in the workplace. An e-portfolio site may be used where students write about their experiences and their reflections about the training, supplemented with pictures of their activities in the workplace. This e-portfolio site can be used by the teacher or adviser to monitor the progress of the student, and also to interact electronically with the student.

Table 26

Implementation Plan for Enriching the OJT Experience

Action	Responsible Person	Timeframe
School and industry partner must ensure that there is sufficient learning experience in the workplace. This can be defined in an OJT syllabus.	TVET Head/ Shop Heads/ Industry	Continuous
OJT must be conducted over a minimum period of six months	TVET Head	0-12th month
Consider the German model of dual training, where the training is switched between the classroom and the workplace throughout the training	TVET Head/ Shop Heads	0-24th month
Hold regular feedback sessions with the OJT students	Shop Heads	Continuous
Use e-portfolio sites to let students post write-ups and photos of their OJT experiences	Shop Heads	Continuous

Evaluation plan. The reaction that this intervention should elicit are 1.) that the teachers and company representatives work together to prepare the OJT syllabus, and 2.) that the students perform the tasks that are spelled out in the program. The desired reaction can be assessed through OJT feedback sessions or the e-portfolios. At the level of learning, students should be

able to perform better with a clearer and shared understanding among all the parties of the OJT- the students, teachers, and industry supervisors. At the level of behavior, the OJT syllabus should be followed by all parties, and the students should be able to demonstrate the skills and competencies defined in the program. Ultimately, this intervention should result in better preparation for the student, so that the company hires this student upon completion of the program.

Table 27

Evaluation Plan for Enriching the OJT Experience

Intervention proposed	(Level 1)- Reaction	(Level 2)- Learning	(Level 3)- Behavior	(Level 4)- Impact
	Observation of students doing OJT and performing the tasks as required in the syllabus	Assessments by the teachers of the student's progress	OJT syllabus is implemented in the workplace	Students should be ready for work by the end of the OJT
Enriching the OJT experience	TVET Center teachers and company representatives jointly develop the OJT syllabus	Evaluation of the student's progress by a company representative assigned as training supervisor Regular feedback from the student	Demonstration of ability to perform goal- directed, work-specific tasks in the workplace	Graduates are employed by the companies where students did their OJTs

Future Research

This research looked into school- industry partnerships from the point of view of the school administration. It was an initial effort at understanding how these partnerships could help enrich the learning experience of students and assist in developing workers with the skills required by industry. What could help shed more light on these partnerships is to look at how these are viewed by the industry partners themselves- what knowledge, motivation, and organizational influences drives businesses and employers to collaborate with schools in the training and development of potential workers. The partnerships can also be viewed from the lens of the students; how do school-industry partnerships benefit the students, and what knowledge, motivation, and organizational influences could make learning more relevant and enriching for the students. Literature also suggests that school-industry partnerships can be viewed from the macro level of school systems, industry organizations and associations, and government, rather than the micro level of individual schools and employers. Ultimately, what needs to be done is to scale up promising practices in TVET education so that more students and more industries could benefit to hopefully raise employment at a national scale.

Conclusion

Don Bosco has 33 knowledge, motivation, and organizational (KMO) assets that enables it to achieve its stakeholder goal of industry partnerships, which translate to 100% employability among its graduates. These KMO assets cluster around six key areas of industry partnerships: development, scholarships, curriculum development, instructional support, on-the-job training, and leadership. The work the leadership of Don Bosco has done to develop these key areas result in graduates who possess the relevant skills needed by industry, and therefore a

high rate of employability. These are the reasons why Don Bosco is an exemplary TVET organization and is worth emulating.

The global problems that this study attempted to address are the twin problems of unemployment and skills mismatch. There were a total of 71 million unemployed youth in 2016, representing an unemployment rate of 13.1%, and this continues to grow (ILO, 2016). The irony of it is that employers complain of jobs not being filled-up because of skills mismatch, with almost 40% of employers saying that a lack of the relevant skills was the main reason for entry-level vacancies (Mourshed et al., 2012).

The education system that Don Bosco has employed in its TVET education has proven that skills mismatch can be addressed if the school leadership and employers got together and stepped into each other's worlds. Because all stakeholders bore the cost of education (the school, the students, and the employers), students from low-income backgrounds were able to benefit the most from Don Bosco's offering. Over the years, lives have been transformed by the work done by the leadership of Don Bosco; true to its mission.

Learning from the Don Bosco experience, the framework in Figure 20 serves as a guide for other schools and organizations desiring to achieve some of the successes of Don Bosco. This framework is a result of hundreds of hours of investigation into what Don Bosco does best. There are several key areas that must be addressed, namely partnership development, scholarships, curriculum development, instructional support, and on-the-job training. With the right leadership, this must translate to the desired student outcomes. The implementation and evaluation plan presented in this chapter details what exactly one must do to at least achieve some of the successes that the Don Bosco model offers. Organizations may not be able to replicate everything, but at least this framework serves as a guide for others. Technical

Vocational education has vast potential to unleash the talent and energy of the youth. With this research, it is hoped that organizations venturing into this field are properly guided.

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APPENDIX A

Interview Protocol

The following interview questions guided the semi-structured interview with members of the management team to validate the assumed influences of the Center.

Interview questions for all (Technical Director, External Relations Officer, Assistant Director, Spiritual Director, Student Activities Coordinator, Shop Heads, and the Assistants):

1. How does being part of the Don Bosco system affect your programs?
2. How does the Salesian philosophy of serving the poor influence your programs?
3. How does Don Bosco instill work ethic among its graduates?

Interview questions for Technical Director, External Relations Officer, Assistant Director, Shop Heads, and one or more of the Assistants:

1. What are the current skills required by industry? What are the future skills requirements of industry?
2. What are national and international standards for TVET education? What are your sources for these standards?
3. How do you identify the skill requirements by your industry partners?
4. How do you integrate the required skills into your curriculum?
5. How do you solicit placements for workplace training from your industry partners?
6. How do you produce graduates who possess skills that matches the needs of industry?
7. How do you nurture your relationships with partners?

8. How do you conduct workplace training?
9. How do your partnerships affect the employability of your graduates?
10. How does workplace training make your graduates more employable?
11. How does integrating industry requirements into the curriculum affect employability of your graduates?
12. How do you feel about your partnerships?
13. How do you feel about the support that you get from your partners for scholarships and supervised workplace training?
14. How do you feel about the integration of industry requirements into the curriculum?
15. Describe your confidence in integrating industry requirements into your curriculum
16. Describe your confidence in securing support from partners for scholarships and supervised workplace training
17. Describe your confidence in producing graduates who have the right skills required by industry
18. Do you think integrating industry requirements into the curriculum is important? Why?
19. Do your industry partners provide feedback about the trainee's development during the supervised workplace training? How do you use these feedback?
20. What is the value of scholarships provided by your partners?
21. How much did your partners contribute to the development of your facilities? How much do you expect them to contribute in the future?
22. What is the value provided by supervised workplace training?
23. How would you rate your reputation for producing graduates who possess skills that match industry requirements? What are the evidences of this reputation?

24. To what extent are your training standards compliant with national government standards? international standards?
25. Are your programs aligned with the Philippine Qualifications Reference Framework?

Interview Questions for the Technical Director, External Relations Officer, and the Assistant Director only:

1. What are your criteria for selecting partners?
2. How extensive are your networks with businesses, industry, and non-government organizations?
3. Do you establish goals regarding your partnerships?
4. Tell me how you develop your strategies to achieve your goals on partnerships
5. How do you monitor your relationships with partners?
6. How do you know when there are areas for improvement in your relationships with partners?
7. Describe your confidence in building industry partners
8. How valuable is your ability to supply your partners with skilled manpower?
9. What prompted you to enter into partnerships? How valuable are your partnerships?
10. How much time, effort, and money do you put into forging a partnership?
11. How do you go about securing partnerships?

APPENDIX B

Survey Instrument

This survey was conducted to evaluate what role industry partnerships have towards the development of the skills and knowledge of technical-vocational students, and their employability in industry/ businesses. This survey also sought to evaluate how Don Bosco TVET Center used industry partnerships to become a promising practice in technical-vocational education.

Name of Employee Position Years in position

Other positions held: Inclusive Dates

1. How valuable are the partnerships established by the school with industry to the employability of your graduates?

☐ Not valuable ☐ Somewhat valuable ☐ Valuable ☐ Very valuable

2. How valuable is the work of integrating industry requirements into the curriculum to the employability of your graduates?

☐ Not valuable ☐ Somewhat valuable ☐ Valuable ☐ Very valuable

3. How valuable is workplace training to the employability of your graduates?

☐ Not valuable ☐ Somewhat valuable ☐ Valuable ☐ Very valuable

4. How confident are you in establishing partnerships with industry?

☐ Not confident ☐ Somewhat confident ☐ Confident ☐ Very confident

5. How confident are you in integrating industry requirements into the curriculum?

☐ Not confident ☐ Somewhat confident ☐ Confident ☐ Very confident

6. How confident are you about conducting workplace training?

☐ Not confident ☐ Somewhat confident ☐ Confident ☐ Very confident

7. Our industry partners have contributed greatly to the employability of our graduates

☐ Do not agree ☐ Somewhat agree ☐ Agree ☐ Highly agree

8. Integrating industry requirements into the curriculum is essential to the employability of our graduates

☐ Do not agree ☐ Somewhat agree ☐ Agree ☐ Highly agree

9. Workplace training is essential to the employability of our graduates

☐ Do not agree ☐ Somewhat agree ☐ Agree ☐ Highly agree

10. Overall, industry partnerships is indispensable to our technical-vocational training programs

☐ Do not agree ☐ Somewhat agree ☐ Agree ☐ Highly agree

11. Comments:

[Add your comments here.]

Thank you very much for taking the time to complete this survey. Your feedback is valued and very much appreciated!

APPENDIX C

Observations

The following activities/ sites were observed to provide more context to the data gathered from interviews and document analysis.

1 Observe how skills are taught in the classrooms and laboratory

2 Observe actual set-up of training equipment and facilities in the school

APPENDIX D

Document Analysis

The following documents were analyzed to provide more insights into the assumed influences and corroborate the findings from the interviews.

	List of Documents Analyzed
1	Memorandum of Understanding/ Agreements with industry
2	Scholarship agreements
3	On-the-job training agreements
4	Curricula/ Syllabi of the Center
5	Documents regarding the Salesian philosophy
6	Awards
7	Philippine Qualifications Reference Framework
8	Standard curricula of the government
9	TVET national and international standards
10	Profile of partners from web pages and annual reports
11	Department of Labor and Employment reports
12	List and amount of scholarships given for the past 5 years
13	On-the-job training reports
14	Employment Reports past 5 years
15	Reports about partnerships

APPENDIX E

Listing of Developed, Emerging, and Developing Countries

Listing of developed countries (ILO, 2017)
(high income)

Andorra
Antigua and Barbuda Argentina
Australia
Austria

Bahamas
Bahrain
Barbados

Belgium
Brunei Darussalam Canada
Channel Islands Chile
Croatia

Cyprus
Czech Republic Denmark
Estonia
Finland

France
French Polynesia Germany
Greece

Guam
Hong Kong, China Hungary
Iceland
Ireland

Israel

Italy
Japan
Korea, Republic of Kuwait
Latvia

Liechtenstein Lithuania Luxembourg
Malta
Monaco
Netherlands Netherlands Antilles
New Caledonia
New Zealand
Norway
Oman

Poland
Portugal

Puerto Rico

Qatar
Saint Kitts and Nevis San Marino
Saudi Arabia Seychelles
Singapore

Slovakia
Slovenia
Spain

Sweden
Switzerland

Taiwan, China
Trinidad and Tobago United Arab
Emirates United Kingdom
United States

United States Virgin Islands Uruguay

Listing of Emerging countries (ILO,2017)
(middle income)

Albania
Algeria
Angola
Armenia
Azerbaijan
Bangladesh
Belarus
Belize
Bhutan
Bolivia, Plurinational State of
Bosnia and Herzegovina
Botswana

Brazil
Bulgaria
Cabo Verde
Cambodia
Cameroon

China
Colombia
Congo
Cook Islands
Costa Rica
Côte d'Ivoire
Cuba
Djibouti
Dominica
Dominican Republic Ecuador

Egypt
El Salvador
Equatorial Guinea
Fiji
Gabon
Georgia
Ghana
Grenada
Guatemala
Guyana
Honduras
India
Indonesia
Iran, Islamic Republic of Iraq
Jamaica
Jordan

Kazakhstan
Kenya
Kiribati
Kyrgyzstan
Lao People's
Democratic Republic
Lebanon
Lesotho
Libya

Macedonia, the former
Yugoslav Republic of Malaysia
Maldives
Marshall Islands Mauritania
Mauritius
Mexico
Micronesia, Federated
Moldova, Republic of Mongolia
Montenegro

Morocco
Myanmar
Namibia
Nauru
Nicaragua
Nigeria
Occupied Palestinian Territory
Pakistan
Palau
Panama
Papua New Guinea Paraguay
Peru
Philippines
Romania
Russian Federation
Saint Lucia

Saint Vincent and
the Grenadines Samoa
Sao Tome and Principe Serbia
Solomon Islands
South Africa
Sri Lanka
Sudan
Suriname
Swaziland

Syrian Arab Republic Tajikistan
Thailand
Timor-Leste
Tonga
Tunisia
Turkey

Turkmenistan
Tuvalu
Ukraine
Uzbekistan
Vanuatu
Venezuela, Bolivarian
Republic of Viet Nam
Western Sahara Yemen
Zambia

Listing of developing countries (ILO,2017)
(low income)

Afghanistan
Benin
Burkina Faso
Burundi
Central African Republic Chad
Comoros
Congo, Democratic

Republic of the Eritrea
Ethiopia
The Gambia
Guinea
Guinea-Bissau
Haiti
Korea, Democratic People's

Republic of Liberia
Madagascar Malawi
Mali Mozambique Nepal
Niger
Rwanda
Senegal
Sierra Leone
Somalia
Tanzania, United Republic of Togo
Uganda Zimbabwe