



# Database Formation of Labor Profiles in Upskilling and Reskilling Programs to Prepare the Philippine Labor Force for the 4IR

## Policy Recommendation

The policy focuses on data management of opportunities for upskilling/reskilling and the profile management of individual laborers' professional information to effectively integrate the influence of technology on day-to-day life (Schwab, 2016).

Laborers that register onto the platform will be matched with programs that can help them meet demands that emerged due to the evolution of their job description. The registration is done to make workers capable of integrating new technologies of the Fourth Industrial Revolution (4IR) into their workflow. Reskilling and upskilling can evolve operators of the past into "smart operators" that can work with augmented reality, virtual reality, and data analytics, allowing them to keep up with demands (Romero et al., 2016).

Digitalizing operations in a socially sustainable manner means optimizing workflows with technology while equipping laborers with the skills to meet evolving job descriptions. The 4IR-based needs of the labor market will be added to the database and will be perpetually updated to ensure that the education system can adjust to the ever-changing labor landscapes. A similar program is "LinkedIn Learning," which keeps people updated with the developments in their industries while adding to the qualifications of their LinkedIn profile (Carson & Marshall, 2019).

## Introduction

Globalization has spread the 4IR rapidly, with companies changing their production operation. Companies resort to technology for labor because it boosts production and improves quality in delivering goods and services (The Manufacturer, 2017).<sup>1</sup> Incorporation of technology in operation was stagnant in the Philippines until the occurrence of a pandemic, solidifying digitization and automation. Forty-nine percent of the Philippine labor force is expected to be at risk of automation within a decade or two (Chang & Huynh, 2016). This forecast is alarming because, as Figure 1 indicates, 76% of the employment share in the Philippines is low and medium-skilled (World Economic Forum, 2016).

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<sup>1</sup>Apple and Samsung replaced 60,000 factory workers with robots (The Manufacturer, 2017)

Research held by the Asian Development Bank (2018) stated that the Philippines would lose 20% of its low-skilled workers to automation, forcing an adaptive approach from individuals and the government. Diving deeper into this narrative, 26.8% of the jobs in the service industry are at risk of automation, most of which hail from the Business Process Outsourcing (BPO) industry. Eighty-nine percent of the workers in the BPO industry are at risk of job loss, making this the most critical sector in need of urgent action from policymakers. Bessen et al. (2020) stated that the 4IR raises concerns for policymakers to provide workers with skills and knowledge to adjust to new jobs. Oppositely, Rossouw (2018) stated that the 4IR would generate more jobs than it will take. Both pieces of research stress the idea of upskilling human capital.

The responsibility of upskilling and reskilling the Philippine workforce is placed upon the Technical Education and Skills Development Authority (TESDA). However, according to the fourth-quarter report in 2020 on Technical and Vocational Education and Training (TVET) statistics, TESDA has not met its enrollment and graduation targets (see Table 1). TESDA only achieved 65.70% of their target enrollment output and 53.36% of their target graduation output (TESDA, 2020). This report presents the need to increase enrollment rates for workers to start learning new skills.

### **Local Digital Transformation Efforts**

Beyond equipping laborers with digital competency and providing an institutional recognition of the skills they possess, programs must be geared towards upskilling Filipinos to ensure that they can meet the demands of the developing job market. Not integrating the advantage of training could limit the potential of workers to adapt to technological and digital change (International Labour Organization, 2019). There should be a constant renewal of skills learned because globalization and technological change have an impact on the demand for new skills.

### **National Digital Transformation Policy filed by Angara in 2020**

Martha Sanchez (2021) reported that as of the year 2020, the number of internet users in the Philippines grew to approximately 73.91 million people. In that sense, Senator Angara proposed a bill that seeks to “create a national framework for digital competency with a focus on information and data literacy, communication and collaboration, digital content creation, safety and problem solving” (An Act Providing for a National Digital Transformation Policy, 2020, p. 2). Besides digital familiarization, the bill should seek to equip Filipino laborers with the necessary skills to supply new labor demands.

### **TESDA Abot-Lahat OFW**

The TESDA Abot-Lahat OFW program allows OFWs to obtain certification of their skill sets. It increases the OFW’s employability. The program is geared to determine the preferred and needed skills of returning OFWs to assure the citizens’ self-employment or employment requisites and extend its services amidst the dangers of the COVID-19 pandemic (TESDA, 2021). However, the program only connects OFWs with assessment programs and not training programs.

### **National Technical Education and Skills Dev’t Plan (NTESDP) 2018-2022 by TESDA**

The NTESDP encapsulates a framework compass that mobilizes the upskilling of labor sectors in the community for assured competent skills development. The plan “envisions a Vibrant Quality TVET for Decent Work and Sustainable Inclusive Growth” (TESDA, 2018, para. 4). TESDA formulated this plan for workers affected by the ever-changing demands of labor caused by paradigm shifts in technology. However, the NTESDP identified that “TVET providers face perennial criticism that they are providing and producing low-level skills and technical education” (TESDA, 2018, para. 9).

### **Conclusion**

This policy encourages the profiling of workers on a larger and digitally-inclined scale to further recognize their potential in their field of work. There

are pros to the general concept of this policy. There is the presence of consistent reskilling and upskilling efforts in line with the demands or needs from the rise of the 4IR. Regarding the advantages of this policy, one of which had already been tested and, therefore, feasible for execution. The Philippine Identification System (PhilSys) Act is similar to the suggested policy as it profiles individual people. Countries like Estonia and Singapore have already acknowledged the significance of injecting technological configuration into their database systems (Goede, 2019). The Philippine Statistics Authority (2021) reported that there had been 25 million people registered for the PhilSys ID in 2021, which proves its tangibility.

The second advantage is that re-enforcing the upskilling efforts of the government through profile and data management allows efficient training of human capital and the production of quality laborers. Ergo, there would be an assured decrease of mismatched skills as employees apply for various fields of work from different companies and organizations. From a macro perspective, investing in improving human capital will make the country's labor market competitive because 99.5% of enterprises are classified as an MSME, and 2/3 of all jobs in the country come from this classification the chance of getting hired (Diokno, 2021).

This policy builds on TESDA and the Department of Labor and Employment's (DOLE) efforts by injecting efficiency into the upskilling and reskilling efforts. This allows the labor force to meet the demands of the 4IR by accommodating the upskilling and reskilling of the workforce. This policy will benefit those whose occupations are set to be automated.

### Challenges in Implementing the Policy

TESDA (2018) noted that its training programs are unsubstantial, and that "TVET providers face the perennial criticism that they are providing and producing low-level skills and technical education" (par. 18). Figure 2 indicates a decline in the number of TESDA students who enrolled in and graduated from programs related to the ICT sector, which signals that laborers are not equipped with the skills necessary to thrive in the 4IR. Contrarily, Microsoft Costa Rica has a policy that ensures constant training of human capital (Monge-González & González-Alvarado, 2007). A program must be in place to boost the employability of the workforce.

As the database and platform for profile registration would be online, the second disadvantage is slow internet speed. Sixty percent of Filipino households do not have easy access to fast-speed broadband connections, which means they would not reap the benefits of effective digitalization (World Bank, 2020).

### Implementation of the Policy

The implementation of the policy can be divided into two phases. The first phase is forming a database, whereas the second phase is the usage of the data. These will be done to profile workers and connect them with upskilling and reskilling opportunities.

The first phase will be implemented by obtaining data from both the supply and demand ends of the labor market. The government will further maximize partnerships with relevant organizations to collate training programs and new job descriptions and collect data from the demand side of the labor market. The laborers will be mandated to create a profile indicating their professional and demographic data through a digital platform. The database will include features that match jobs with relevant upskilling programs for the individual laborer to upskill for effective job fulfillment, and the data will be used to make data-driven actions.

The second phase will be implemented through efficient internal and external communication. TESDA will determine the upskilling and reskilling needs of the labor force based on the database. Companies will be mandated to have employees' work routines registered onto the platform. Lastly, the database feature, which matches labor profiles with relevant upskilling and reskilling opportunities, will be used by sending a message to profiles indicating the program suggested by the database and how it will further their career and increase their job security.

### Summary

The 4IR has been spreading rapidly, and companies have resorted to using technology for labor. This has ushered in an economic turmoil because most Filipino workers have low-medium-level skills, putting them at risk of being replaced by automation. Current upskilling and reskilling measures must be reinforced to meet new labor demands.

Although the Philippines' policies focus on digital competency, they are yet to be written towards equipping people with relevant skills that will allow them to perform in a rapidly evolving digital labor landscape. Companies complained about a mismatch in skills, meaning that workers are not being provided with the appropriate skills demanded in the workforce.

This policy will build upon existing programs with similar goals and will provide Filipinos with relevant skills. It is essentially the data management of individual labor profiles and upskilling and reskilling programs to connect laborers with upskilling opportunities. Laborers will be presented with upskilling suggestions to adapt to the 4IR work environment.

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## Appendix

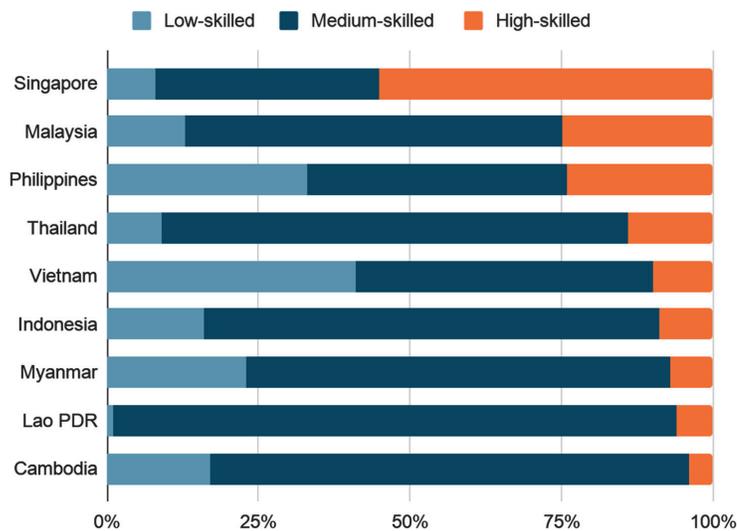
**Table 1**

*Number of Enrolled by Region and Sex: January to November 2020*

Region	Enrollment Targets	Enrolled	Graduation Targets	Graduated
<b>I</b>	37,300	40,043	33,570	30,032
<b>II</b>	39,690	38,262	35,721	32,266
<b>III</b>	68,273	43,862	61,445	26,987
<b>IV - A</b>	63,410	32,546	57,969	22,044
<b>IV - B</b>	25,066	24,421	22,560	18,862
<b>V</b>	37,028	20,591	33,326	13,442
<b>VI</b>	63,445	32,630	57,102	23,541
<b>VII</b>	83,398	30,443	75,061	21,382
<b>VIII</b>	55,655	40,619	50,089	29,865
<b>IX</b>	46,696	38,477	42,026	30,246
<b>X</b>	31,867	38,982	32,573	30,792
<b>XI</b>	38,911	42,557	35,020	33,275
<b>XII</b>	38,234	19,911	34,410	11,237
<b>BARMM</b>	16,000	11,627	14,400	7,268
<b>CAR</b>	26,347	28,689	23,713	23,892
<b>CARAGA</b>	22,435	22,829	20,191	16,395
<b>NCR</b>	170,811	62,305	153,730	46,203
<b>Total:</b>	<b>865,566</b>	<b>568,694</b>	<b>782,906</b>	<b>417,729</b>

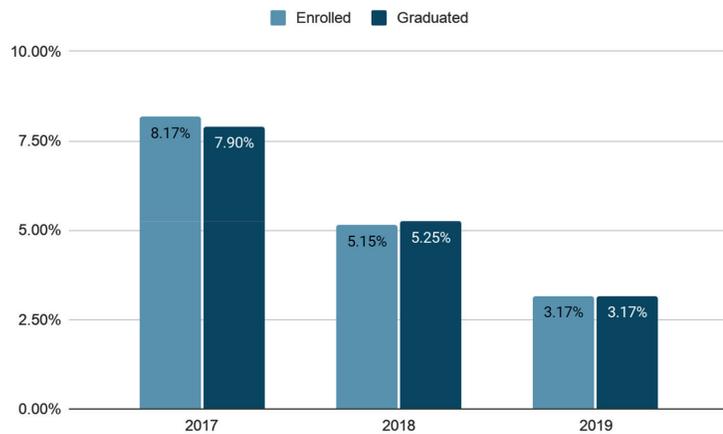
Source: Technical Education and Skills Development Authority, 2020

**Figure 1**  
*Employment Share in ASEAN Countries in 2016*



Source: World Economic Forum, 2016

**Figure 2**  
*Percentage of TESDA Students That Enrolled in and Graduated From ICT Sector Related Programs, 2017-2019*



Source: Technical Education and Skills Development Authority, 2019

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