LIFELONG LEARNING STARTS HERE: AN OVERVIEW OF COMPETENCY STACKING

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TESDA

How can TVET competency stacking work in the Philippines?

Introduction

It is said that change is an inevitable part of life. Change also applies to education - as life progresses and complex systems emerge in society, education follows suit and different learning systems emerge. These past few years, though, "change" has occurred in the form of the Fourth Industrial Revolution (4IR) - digital technologies and processes have become so ubiquitous in daily life that the workplace is seeing a gradual shift on what skills and competencies are considered important or essential. In places where mechanical, hands-on skills are valued highly, they are now seeing the importance of soft skills such as teamwork and interpersonal communication. Obtaining these skills, however, is a different story, as the 4IR demands that education be dynamic and lifelong.

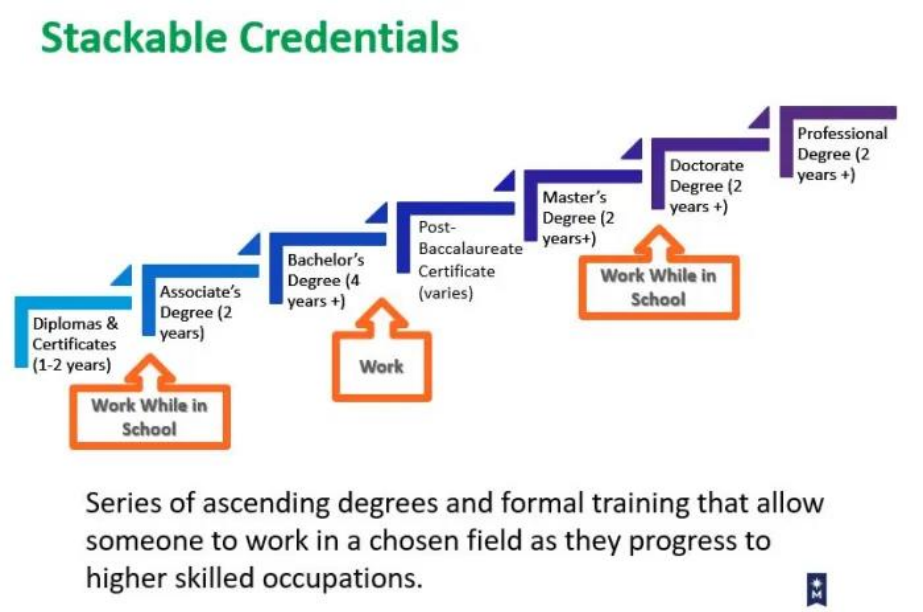
Where certain skills are valued highly today, priorities in the labor market may shift as the 4IR demands. Educators are thus presented with the challenge of keeping up with this change and improving upon the current system in order to meet this new type of labor demand. Among the solutions by scholars is called "competency stacking".

I. What is credential/competency stacking?

Competency stacking, known as credential stacking in other countries depending on nomenclature, is a system wherein learners accumulate knowledge over time, in the form of credentials and competencies that build up a person's qualifications (Williamson and Petinsky, 2016; Leibert, 2017). It is an emerging tool that allows students to obtain credentials/competencies in the short term, which they then build up continuously in the hopes of eventually obtaining higher-level education or qualification that industries recognize. Unlike traditional learning systems that packages all credentials/competencies as a single program or course, credential stacking dictates that these are packaged separately, thus making them more affordable, and thus making them a more equitable method to obtain postsecondary education (Wilson, 2016).

There are many reasons why competency/credential stacking appeals to professionals, particularly to young working adults. Generally speaking, young workers immediately look for work not long after they graduate, and while most of them express desire to enrich their knowledge or skills, they no longer have the time and/or the resources to study again. At times, personal circumstances forbid them from pursuing higher learning, such as when they move to another city or when they start their own family. Competency/credential stacking comes into play here, because it allows them to continue learning while they work. As this type of education happens over a protracted period of time, usually longer than programs with a fixed schedule and number of years to complete, competency stacking is also seen as a way to introduce lifelong learning (as illustrated by Figure 1). On the flip side, stacking can therefore be said to also apply to "micro-credentials", which are smaller in scale and are based on a coherent set of skills or knowledge with value on labor or professional needs (TESDA, 2021).

Figure 1. Illustration of Credential/Competency Stacking



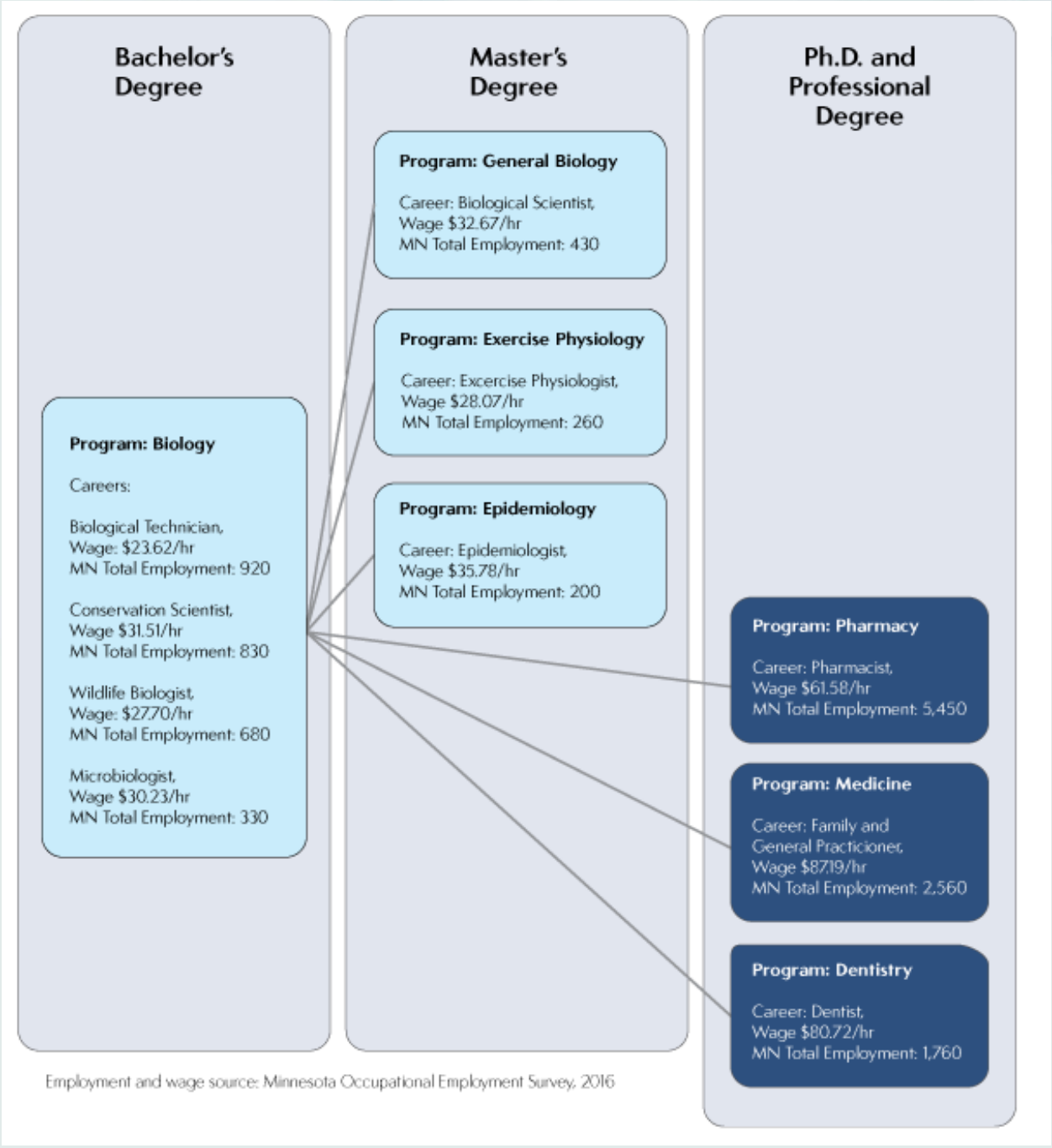
Source: DeniseMpls Career Services

What makes stacking different is that the skills and qualifications that learners obtain piecemeal all lead to a higher credential or competency. As Leibert said, for competency/credential stacking to take place, one credential *must carry over* to the next credential, then to the one after that, and so on. Things may be different when micro-credentials are brought to the picture, as they are usually smaller in scope and scale. In the Philippines' case, for example, completing micro-credentials nets a micro-credential certificate of achievement or MCA, which in turn can lead to a national certificate or NC.

Though not necessarily a new method for learning, credential/competency stacking has gained a lot of traction these past few years due to the 4IR. As labor demands shift and change, prospective workers are often faced with the possibility that the degrees/licenses/qualifications they obtained in the past are slightly out-of-date, or at worst completely irrelevant, by the time they land a job. This reality nudges them to obtain other qualifications in order to remain competitive in the job market. Those studying in the United States have extensively seen this method of learning in action, as studied by Leibert in 2017 on how stacking may or may not

affect the wages that a person earns when they finally enter the labor force. In a sample size she used in the study, which consisted of graduates from the University of Minnesota from 2007 to 2011, Leibert saw a pattern where students who graduated with biology degrees tended to earn competencies related to medicine, seeing that they earn greater wages working in the health sector compared to the biology sector. Biology students from the University of Minnesota had an easier transition, Leibert said, because they obtained competencies/credentials that are also recognized and weighted in health courses (as illustrated in Figure 2).

Figure 2. An Example of Competency/Credential Stacking; "Stacking Opportunities from a Bachelor's Degree in Biology" (University of Minnesota, 2016)



Source: Minnesota Department of Employment and Economic Development

II. Competency stacking and TVET

Since technical-vocational education and training (TVET) is seen as a type of higher-level learning, competency stacking can also apply here. However, the particulars of competency stacking in TVET may be a bit different from how it is done in conventional education.

According to a 2017 working paper by Bailey and Belfield, competency stacking can be seen as one of three types:

a. **Progression** - learners obtain a lower-level qualification (i.e. from a short-term course) in order to eventually obtain a higher-level qualification (i.e. a bachelor's degree or greater).
b. **Supplemental** - learners obtain a lower-level qualification to add to their higher-level qualification; the lower-level one may not be directly related to the higher-level one.
c. **Independent** - learners obtain a lower-level qualification to diversify their skillset, usually adding to their repertoire of other lower-level qualifications.

For a competency or credential to qualify in a stack, it needs to have the following characteristics:

a. It is of a short duration, usually less than one year
b. It has labor market value (i.e. it adds to the learner's earning power)
c. There is a clear path to obtain it

As one may surmise, the third point is particularly important in a **progression** stack, not only because this will often dictate the series of steps that the learner will take throughout the path, but also because this ensures that the competency or credential will be recognized as a requirement to obtain a certificate or badge they can present to their employers for later. In addition, a progression type of competency stacking is best for TVET, since this directly addresses the needs of the labor market by configuring the TVET competencies or credentials depending on skills requirements (Bailey and Belfield, 2017).

That being said, the other two stacks may also prove valuable for learners. As stated in this paper's introduction, the 4IR has made it so that skills requirements are not necessarily set in stone. When labor needs shift, learners can opt for **supplemental** stacking, in that they learn new skills that may not be directly related to their current qualification, but still remain competitive in the market. Supplemental stacking is good for those who already have their bachelor's degrees but still wish to enrich themselves with skills certificates or badges that employers will recognize. To use an example by Bailey and Belfield, a medical student may take up a course in medical transcription or medical insurance to become a health technician.

Independent stacking is also valuable, especially in situations that see a great and urgent demand for a particular occupation. For instance, the ongoing COVID-19 Pandemic has affected labor outlook throughout the world, so much so that many people have lost their jobs due to infections, lockdowns, and other such disruptions. Those who earned numerous competencies or credentials, regardless of their relevance to each other, are said to have landed jobs quicker due to their very diverse skill set (World Bank, 2020). Taken on its own, however, independent stacking is seen as a lot riskier because it lacks the coherent structure that progression stacks have (Bailey and Belfield, 2017).

III. Advantages of competency stacking in TVET

As said previously, competency or credential stacking is seen as a good alternative to conventional postsecondary education due to circumstances encountered by young working adults. Competency stacking avoids, or at least minimizes, these problems since it allows learners to typically **learn at their own pace, even while they work**. In other words, competency stacking allows learners to:

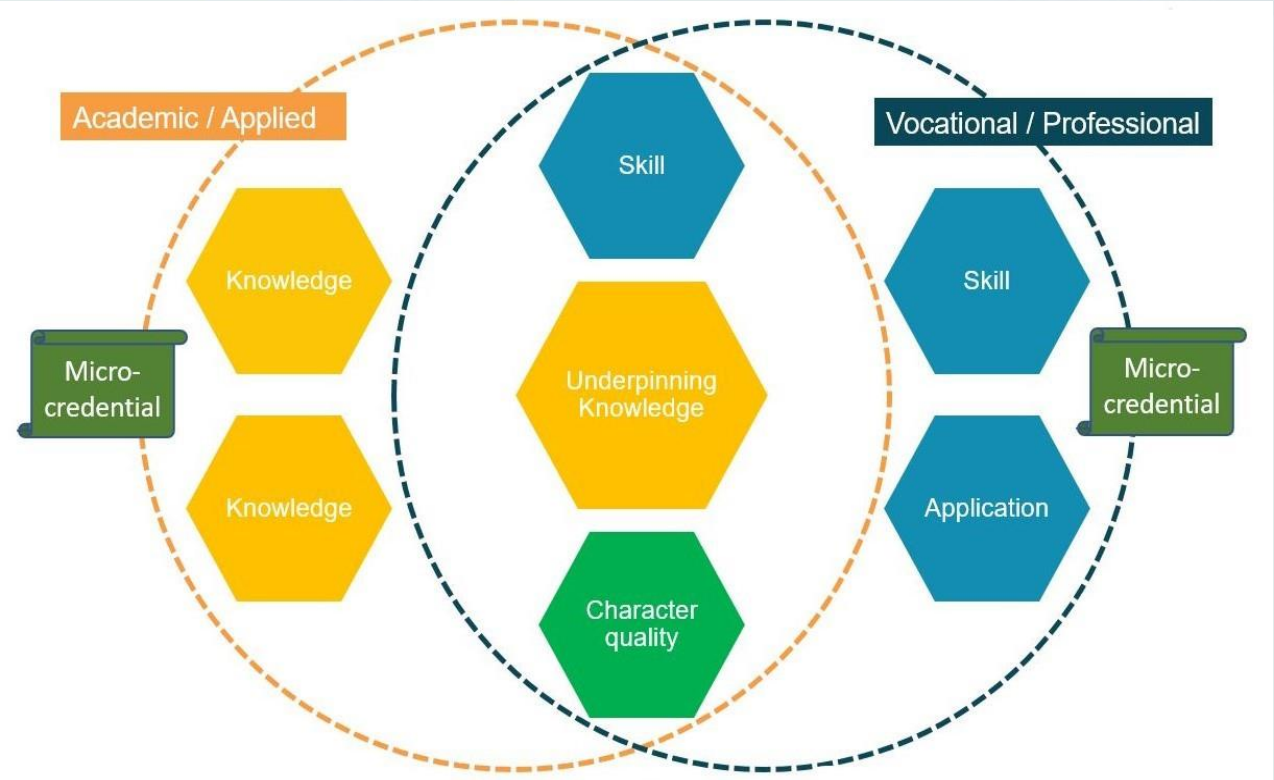
a. Work full time, then study part time, or

b. Work part time, then study full time, or

c. Study full time entirely to focus on obtaining a higher-level qualification

It is also said numerous times that competency stacking allows **students to tailor their skill set according to prevailing labor demands.** Since the competencies and credentials proposed for stacking are usually dictated by the industries themselves, learners can therefore train in a program that is both up-to-date and authentic. Under this lens, TVET can play a huge role in improving an individual's skills and academic knowledge with (essentially) a custom learning program that supplements any prior learnings they may already have (Figure 3).

Figure 3. Tailor-Based Learning Outcome from Vocational and Academic Education



Source: LinkedIn

This ability to customize a person's learning is arguably more important today, considering the present situation born from the 4IR and the ongoing COVID-19 Pandemic. According to Fernandez (2020), such a thing is most effective if industry groups are directly tapped to learn about the current skills deficiencies. Ergo, industry groups need to support competency stacked-learning programs themselves by recognizing certificates or badges that learners gained from them. Assuming such a system is already in place, however, then prospective workers can benefit

from being fully-equipped for the work ahead since their competencies or credentials have already been stacked, directly according to their employers.

All of this leads to **learners being more likely to be employed** in the future, especially if they pick competencies or credentials related to health, business, or career-technical skills (Bailey and Biefield, 2017).

Another benefit seen in this learning method applies to the learning institutions themselves. Introducing programs that are structured with competency stacking in mind can **entice learners to enroll even in times where enrollment rates are low** (Meyer and Shieldman, 2021). This is particularly important in the present Pandemic, which has seen universally low enrollment rates in all levels of education across the world. More often than not, many stackable competencies can be obtained online, though admittedly this is still seen as a deficiency in some countries due to problems beyond the educators' control, such as poor internet infrastructure (World Bank, 2020).

IV. Can TVET competency stacking work in the Philippines?

As the leading authority for TVET in the Philippines, TESDA is responsible for making sure that the country's TVET systems are up to speed on changes in both labor and education. In light of the 4IR, TESDA has also stressed the importance of upskilling among the country's highly-skilled workers if they wish to adapt to the technological changes brought about by the 4IR. The COVID-19 Pandemic has also urged TESDA to focus on helping Filipinos find gainful employment by equipping them with the right technical skills despite the limitations to the learning environment at the moment.

Given the previously mentioned studies done outside of the country, TVET-focused competency stacking is relevant to the current situation. The particulars on how to implement this system, however, are a challenge that needs to be addressed. The Bell Policy Center, which had facilitated credential stacking learning programs in the post, posited that the following conditions must be met in order for such a program to be successful:

a. A lead organization to handle all aspects of the learning program
b. Continuous engagement with industries and other learning institutions that are participating in the program
c. Support for learners to navigate within and among learning institutions
d. Affordable and transferable credentials that learners have access to

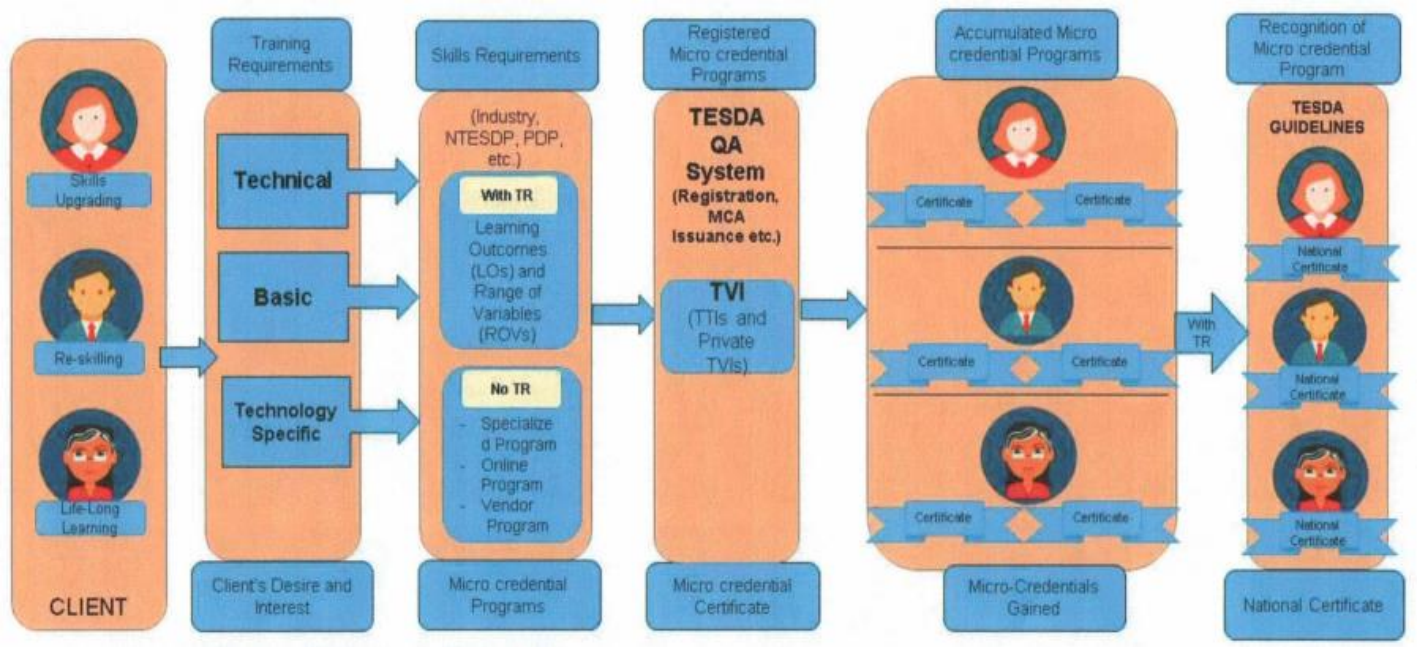
TESDA has the capacity to fulfill these conditions, given that it has already established guidelines in creating a Micro-Credentialing System for lifelong learning, which came to effect on May 19, 2021, and also to adhere to the agency's direction of providing area-based and demand-driven TVET. The Micro-Credentialing System covers all delivery methods of learning (formal, non-formal, and informal) that are also flexible enough to accommodate modalities through institution-based, enterprise-based, community-based and mobile-training arrangements (which also include using the TESDA Online Program or TOP for online learning). The objectives of this system are:

a. Provide a system of recognizing a smaller set of courses or modules or units which are designed to provide learners with knowledge, skills, values, and competencies in an area of study and/or practice;
b. Establish guidelines for the recognition and certification of Micro-Credential programs;
c. Recognize emergent skills related to new technology so that they can be brought quickly to market to meet skill needs;
d. Provide a way for people with no qualifications to have their existing learning or skills credentialed;
e. Re-credential knowledge and skills where this is a requirement;
f. Provide scholarship grants to the learners and workers, including trainers, to assist them in their career and lifelong learning endeavors.

The current system encourages a progression or supplemental stacking of credentials, as were defined by Bailey and Bleifield, particularly the former, given that accumulating multiple MCAs will eventually lead to an NC (see Figure 4). The initiative of TESDA together with CHED on the implementation of pathways and equivalencies wherein the Recognition of Prior Learning (RPL) is applied through assessment and certification. Likewise, the Micro-credentials are another system wherein an individual may gain competencies through institutional assessments, much like TESDA's Training Regulations, thus netting an MCA.

Further, the supplemental stacking wherein those that have completed Bachelor's Degree take TVET programs, is currently observed. For three consecutive years, the results of the Study on Employment of TVET Graduates disclosed that an average of 32% of TVET graduates are college graduates.

Figure 4. TESDA's Micro-Credentialing System and Process Flow (as of May 2021)



Source: TESDA

It is the hope that this system can result in an increase for on-demand training within communities, employers, and learners amidst the Pandemic. It is also aimed at provide learners and skilled workers with a system "to cultivate further education, lifelong learning for their career advancement and support their upskilling and reskilling for them to be able to move across their working life, as it is impractical for them to stop working and go back to the school system each time they shift careers or change jobs", which is the rationale behind competency stacking in the first place.

Of course, this current system is limited in its current scope, as it is primarily focused on the following value chains:

a. Agri-Fishery
b. Construction
c. Information and Communications Technology-Business Process Management
d. Logistics and Transportation

Should the current system be adapted to recognize full-blown credentials, or even adapted into a separate system altogether, then the aforementioned limitation in scope will have to be addressed to include other sectors. Health and wellness, for instance, has been cited as a very lucrative pathway for competency/credential stacking in the United States (Bailey and Bleifield, 2017; Meyer and Shieldman, 2021) that perhaps TVET learners in the Philippines may also wish to get into. Using the example indicated by Leibert (2017), students with biology-related degrees may take up Medical Transcription NC II to become health technicians, but only if a more proper competency stacking system for Philippine TVET is in place.

One challenge that must be overcome to make this system a reality is determining how the Philippine Qualifications Framework (PQF) can work for micro-credentials. The PQF enables industry leaders and TVET facilitators to determine the appropriate level that a particular skill or competency should be assigned to. This is done by looking into the various elements of a unit of competency, then reviewing them against the level's various domains (i.e. in terms of knowledge, skills and values, degree of independence, and application), which in turn corresponds to an appropriate National Certificate (NC) or higher. However, the PQF currently packages TVET courses that lead to NCs as full-blown programs (i.e. collections of skills and competencies), as agreed upon by TESDA and its industry experts. The PQF currently does not recognize individual skills and competencies beyond how they are grouped, meaning that a learner with a collection of credentials (as dictated by competency stacking) cannot be certified.

Thus, introducing individual skills and competencies must first consider how they can be aligned with the PQF, requiring further consultation on TESDA's part. A key point of contention has to be the fact that different skills and competencies can exist in different NC levels. TESDA should consider (for example) how many NC I credentials can lead to a full-blown NC I certification, how many of these credentials can be considered for NC II, and so on. Considerations to the PQF should also take into account the ASEAN Qualifications Reference Framework (AQRF), since the PQF is aligned to it, thus influencing how competency stacking can determine a learner's employability outside of the Philippines.

V. Way Forward

While it can be argued that the foundation for creating a competency stacking system is already in place for Philippine TVET, more refinement needs to be done by TESDA to further realize its potential:

a. **Use of the TVET Competency Stacking as reference in the enhancement of existing initiatives -** given that there are already systems in place that results are aligned with the competency stacking, like the PCT, vendor certification, micro-credentialing, among others; the development of the programs or TRs should be looked into a perspective wherein competencies that will be covered can be stacked in such a way they will be recognized across different sectors/industries without the learners taking up new courses from scratch.

   The assessment and certification of the PH TVET should likewise be responsive on how specific competencies or learning outcomes will be assessed. A new certification level or concept can be studied and created other than the National Certification and Certificate of Competency that is currently being used to cover competency stacking. Another is the vendor recognition which might expand TVET capacity to recognize even the smallest acquired competencies.

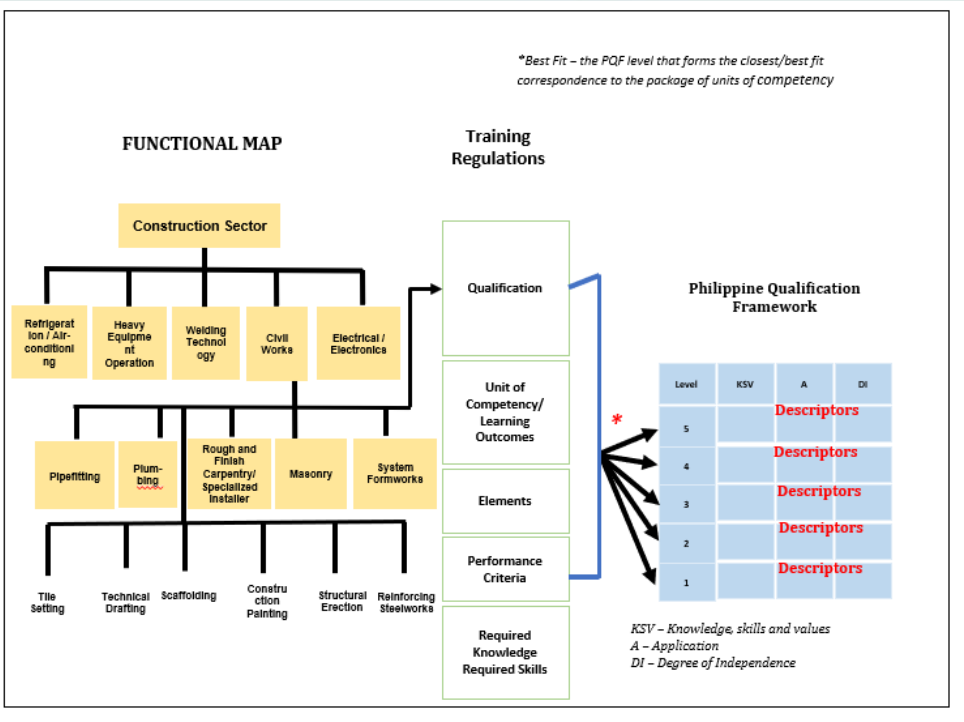
b. **Aligning scholarship provision -** among the scholarship programs of TESDA, the arrangement of the Tulong Trabaho Program is likely to be applied in the competency stacking. However, other scholarship programs can also be re-designed so that this concept or even similar initiatives that TESDA has developed will be considered and the appropriate allocation will be provided to support especially the emerging skills set.

c. **Gather commitments from industries and training institutions/schools to support any TVET competency stacking system** - As said by the Bell Policy Center (2020), competency stacking will only be successful if industry groups/industry boards are tapped to provide assistance in facilitating training programs, particularly for learners who wish to have their current competencies/credentials meet current industry needs. This can be commenced with the Recognized Industry Boards.

d. **Determine what other sectors can be included in a TVET competency stacking system** - As stated previously, competency stacking should encompass various industries and sectors to provide learners with greater flexibility for lifelong learning. The potential for health-related competencies to supplement biology-related degrees is already a given. Perhaps the same could be said for, as an example, cybersecurity competencies and degrees related to information technology and computers. The goal here should be to determine what sectors can support progression or supplemental stacking, as an independent stacking may lead to learners obtaining competencies with no structure whatsoever, thus providing no positive impact on the labor market (Bailey and Bleifield, 2020). TESDA may consider piloting this initiative selected sectors to determine what are the factors that will make it successful and acceptable both for the industry and the training institutions. TESDA may consider piloting this stacking initiative for selected sectors to determine what are the factors that will make it successful and acceptable both for the industry and the training institutions.

e. **Study the implications of competency stacking vis-à-vis the PQF and AQRF –** Given that the PQF currently recognizes skills and competencies as they are packaged according to their respective levels, TESDA may wish to consult with the relevant experts on how the same Framework could be applied for individual credentials. It was already stated that one concern that should be addressed is the sequencing of NC I-level credentials leading to a full-blown NC I Certification, as well as how many NC I-level credentials can be stacked to be considered for an NC II Certification, and so on. Thus, any attempt to establish stackable competencies should consider aligning it with the current PQF (Figure 5).

Figure 5. TVET Functional Analysis with Alignment to PQF



Source: AQRF Committee

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