ABSTRACT

Title of Dissertation:	Taiwanese College Graduates' Employability in the Global Context
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College graduates' employability has been one of the focal objectives in higher education globally since the 1970s (Brown & Lauder, 2011; Hillage & Pollard, 1998; Brown et al., 2003). Under the massive impacts of globalization, technology revolution, and knowledge-based economy, the essence of graduate employability is shaping the curriculum design, as well as the career paths of Taiwanese college graduates. While current Taiwanese college graduates' employability research focuses on the demographic description of graduates', educators' and employers' perception regarding employability, in-depth qualitative research that examines Taiwanese college graduates' experiences and perceptions regarding their employability readiness is scarce in the literature. Moreover, employability research in Taiwan needs to be addressed using a more holistic and cultural relevant approach where graduates' social, emotional, and professional development needs are taken into consideration.

This study aims to investigate Taiwanese college graduates' employability building, in terms of whether and how Taiwanese college graduates are well prepared for the knowledge, skills, and competency for the fast-changing world of work in Taiwan's

particular social and economic context. To address the gap in the literature, this study focuses on the graduates' narratives and digs into their perception of how college experiences, including college curriculum, work-related experiences, engagement with extracurricular activities, and career coaching resources contribute to graduates' formation of competitive employability. In addition, this study also attempts to re-envision higher education to extensively accommodate graduates' professional and developmental needs in a more holistic manner.

The study uses criterion-based sampling to reflect certain demographic characteristics of the graduate population. Eleven recent graduates from various geographic locations, disciplines, professions, and types of universities were invited to participate in the study. All participants received undergraduate degrees from departments of a Taiwanese higher education institution within two years; and had worked for more than one year. For male participants who needed to fulfill compulsory military service, the time served in the military is excluded from the two years limit. For recruitment of the participants, the research also put in effort to achieve balance in terms of gender, profession, discipline, and geography. The researcher conducted eleven individual interviews and two focus groups, and collected participants' written reflections for analysis.

In the study, graduates reflected upon how effectively the college curriculum, involvement in extracurricular activities, work-related engagement, career services, and other relevant college experiences contributed to employability building. Findings indicate that Taiwanese graduates perceive the existence of a gap between the preparation in university and the real world of work. The study also points to the

context-bounded career transition struggle facing Taiwanese graduates. The researcher carefully examines graduates' experiences and proposes constructive solutions to enhance college students' and graduates' learning outcomes in all aspects of their college experiences. Based on the finding, the researcher proposes to redefine employability in a culturally relevant way, acknowledging unique Asian work ethics, and identify the critically needed employable skillset demanded in the participants'' professional fields. Besides mending the current campus-workplace gap, the study further discusses how higher education should prepare students and graduates for challenges brought upon by the fast-advancing technologies, and contemplate on the core values of the 21st century higher education.

TAIWANESE COLLEGE GRADUATES' EMPLOYABILITY IN THE GLOBAL CONTEXT

by

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Dedications

To my grandma (彭美惠) and my parents (彭芳盛、張鶴齡),
who brought me up and love me unconditionally.

To my family, who support me with laughter, prayers, and many kisses and hugs.

To my Lord, *Jesus Christ*: You are the reason I am here.

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I have always been thinking what would it feel like when I get there; and here I am, with my heart full of thankfulness beyond description.

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Truly, I owe innumerable thanks to my beloved family, especially to Chuanfu, my dear husband. Somehow he believed that I was capable to take on the challenge of the whole doctoral study thing and pushed me here, in spite of his own discomfort. God has blessed me so much that I am loved by my best friend, a reliable man, and a great father to our three beautiful children, Benjamin, Elizabeth, and Asher. Thank you, my babies; you are the most precious treasure God has bestowed to me in the world. Nothing has been more "educational" to me than watching you grow and thrive. And finally, the day has come; God has listened to your prayers, mommy is no longer a student. Hooray!

Moreover, a special "Thank you" to my mother-in-law, who puts our needs in her heart, and supports us selflessly in the past several years. I'd also like to acknowledge my family in Taiwan, you have shown me unconditional support, love and patience that I cannot forget.

Four years ago, the journey started with the pleasant yet surprising arrival of my third child. One month after my first doctoral course, I was in labor. The journey is not only an academic one, but also a spiritual one. Life with three children under five years old, work, and the seemingly endless academic deadlines have humbled me, and made me stand in awe for realizing how much strength, joy, and love my Lord has given me throughout this journey. It is He who brought me here, entrusted me with a unique calling; and it will also be He who began a good work in me and will perfect it until the day of Jesus Christ (Philippines 1:6).

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The Big Picture

"It was the best of times, it was the worst of times, it was the age of wisdom, it was the age of foolishness, it was the epoch of belief, it was the epoch of incredulity, it was the season of Light, it was the season of Darkness, it was the spring of hope, it was the winter of despair, we had everything before us, we had nothing before us, we were all going direct to heaven, we were all going direct the other way - in short, the period was so far like the present period, that some of its noisiest authorities insisted on its being received, for good or for evil, in the superlative degree of comparison only."

Charles Dickens, *A Tale of Two Cities*

The Changing World

We are living in a critical era marked by changes. People today live in a world that is dramatically different from centuries ago. In 2017, the world population is estimated at 7.49 billion.[1] The United Nations estimates it will reach 8.5 billion by 2030, 9.7 billion in 2050, and 11.2 billion in the year 2100 (United Nations, 2015). With the fast expanding world population, competition for finite natural resources is growing more intensely. Demographic trends also demonstrate the shifting meaning of both diversity and social cohesion, affected by the unavoidable aging issue in developed and developing nations. In the meanwhile, technology advancement will definitely expand its impact on shaping the way we live, learn, how we see ourselves and the world, and the way we connect to each other. By all means the economy for a new era will go through a series of changes in response to social and technological development. Leaving the industrial age mentality behind, trends like globalization, the shift to knowledge-based economy, and reality of information age are transforming the meaning of jobs and careers radically. I will address each of these areas in the following sections.

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[1] "World Population Clock: 7.5 Billion People (2017)- Worldometers" www.worldometersinfo

Globalization

First, the world has become flatter. Thanks to the advance of technology, cultures and new trends are now shared globally and instantly; information spreads at a speed that previous generations could not have imagined. The impact of the information revolution and globalization is extensive. Anthony McGrew (2000) attempts an objective definition of globalization, describing it as having five features:

> First, it implies that ... events and activities in one part of the world come to have immediate significance for individuals and communities in distant parts of the globe ... Secondly, ... all states are now part of the global trading order and world trade has grown extensively in the post war period. ... Thirdly ... the distinction between what is internal and what is external is increasingly blurred ... Fourthly, growing interconnectedness generates a host of transnational problems ... which cannot be resolved by the action of individual governments but only through multi-lateral or international cooperation ... Fifthly, the density and intensity of patterns of global and transnational interactions [are] generating constraints upon all of their [nation states'] activities and their autonomy" (p. 57).

Most definitions of globalization incorporate a number of common elements (Carnoy & Rhoten, 2002; Nissanke and Thorbecke, 2007, Wood, 2007) that include:

- **Changes in technology and communication** that facilitate fast and free flow of information, knowledge and ideas which instantly connect people, governments, businesses and markets, cultures etc. around the world;

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- **Cultural and societal changes** on a global scale facilitated by advances in transportation and communication which have led to major movements of peoples and the rapid diffusion and convergence of cultural, linguistic and ideological paradigms and patterns;

- **Political shifts** as reflected in the existence of global networks of companies and interest groups, international agreements and the emergence of supranational institutions that affect the power of the nation state;

- **A globally integrated economy** characterized by increased openness to international trade, capital and labor movements operating in "real time" and with a new dependency on technology and information.

The baseline for the definitions discussed above started with the economic model shifts. While boundaries of nation states are disappearing, the interconnectedness between political and economic entities is creating new meaning for the labor market, certainly shaping new landscape of education. Globalization, or the "flattening" of the world as Friedman (2005) calls it, has had enormous impacts on all areas of the daily lives of a large portion of the world's population, including education. The need to expand educational opportunities to meet the social demands for more education, and the economic demands of the global economy for better educated workers mean that governments need to increase their expenditures on education. Education, as a service industry, is part of a globalization process under the umbrella of General Agreement on Trade in Services (GATS) (WTO, 1998). Moreover, in the new rules of the game, the role of government is also changing. Many countries are forced to give up the protectionist mindset and embrace the free market. As a result, governments will not be able to guarantee employment for

their own citizens; instead, they will try to provide opportunities for all to be employable, through training and education, especially higher education.

The knowledge-based economy

Another significant influence shaping the global economic situation is the orientation of many countries toward developing a knowledge-based economy. The Organization for Economic Cooperation and Development (OECD) defines a country with a knowledge-based economy as one where "the production, diffusion and use of technology and information are key to economic activity and sustainable growth" (OECD 1999, p. 7), or "economies which are directly based on the production, distribution and use of knowledge and information" (OECD, 1996, p. 6). Powell and Snellman (2004) define a knowledge-based economy as involving "production and services based on knowledge-intensive activities that contribute to an accelerated pace of technological and scientific advance as well as equally rapid obsolescence." They further explain that the key components of a knowledge-based economy include a greater reliance on intellectual capabilities than on physical inputs or natural resources, combined with efforts to integrate improvements in every stage of the production process, from the R&D lab to the factory floor to the interface with customers (Powell & Snellman, 2004). In such a matter, an economic entity's investment in knowledge refers to investment in areas that generate knowledge, such as research and development, software, education and science; it also refers to innovation. The centrality of the growing impact of knowledge-based economy has given higher education an unprecedented importance within countries and internationally, because higher education creates new knowledge which is necessary for the new economy (Casey, 2006). Although the relationship between the increasing levels of knowledge and economic growth is still under debate, more governments have been placing higher education as the significant means to enhance their

citizens' employment and competitiveness in the new economy. These "knowledge workers" of the future are expected to command high level of general and specialist knowledge that will meet the growing need of high-skilled job vacancies based on the economy model shift, which demands sharp minds instead of strong muscles.

To conclude, the current trend of globalization plus the push towards a knowledge-based economy is changing the way people live and think. Moreover, it has placed higher education in a focal point in respect to a nation's economic development. These forces are portraying a different picture in regards to the expectation and meaning of a college degree, along with the changing qualification and position of the knowledge workers.

The Changing World of Work

The job revolution

The current era is facing a comprehensive transformation of the nature of jobs. However, this is not an unprecedented occurrence. Gordon (2013) indicated that there have been at least four previous labor market eras over the course of human history: the prehistory era, agricultural age, industrial age and computer age (Gordon, 2013, p.11). The focus of each era transcends from the survival in prehistory, to the machines in industrial age, then to the automation in the computer age. From 2006, the world entered the cyber-mental age, identified by the boost of digital technology from the early 2000s. It focuses on innovations that surpass the past machinery works, and asks people to operate regarding knowledge-based work. As a result, now many high-paid jobs require workers to have the knowledge and preparation for creating, implementing, or using these new technologies and the information they produce (see Table 1.1). Innovation becomes the key word in the new era. As always, transition could be tough. Currently,

many workers are faced with the necessity of making the transition to a labor market place dominated by digital technology.

	I	II	III	IV	V
Era	Prehistory	Agricultural Age	Industrial Age	Computer Age	Cyber Mental Age (Digital technology)
Time	100,000-5,000BC	5,000 BC-1850	1850-1970	1970-2006	2006-?
Focus	Survival	Food	Machines	Automation	Innovations
Result	Hunting - Gathering	Farming	Mass Production	Data/ Robotics	Intelligent Machines
People	Subsistence Work	Manual Work	Semi-Skilled Work	Information Work	Knowledge work

Table 1.1. The progress of labor market eras. Edward Gordon (2013), p. 11.

Gordon (2013) projected that America is at the beginning of its third great technology revolution, with the potential of transforming the list of the most demanded jobs and employment opportunities in newly developed areas. Some major breakthroughs that will produce new positions include the use of big data, Nano science, 3-D printing and advanced Robotics. He predicted that, between 2010 and 2030, about 70 million baby boomers from the workforce would retire; thus, many job and career opportunities would be on the market. This would even be true in traditional heavy-labored occupations that were forecast to shrink or not grow significantly (Gordon, 2013, p. 26-27). The empirical data from the United States Bureau of Labor Statistics regarding the number of new job growth and replacement jobs demonstrated this trend of occupational shifting in the nation (Bureau of Labor Statistics, U.S., 2016). The statistics forecasted that 46.5 million jobs would have to be filled by 2024; in which 35.3 million jobs are replacement positions for existing baby boomers, and 11.2 million are new jobs that did not exist before. If we look more closely, among the positions, there are five general growth areas that are part of almost every U.S. industry: research and development (R&D), information

technology, operations, management, and sales. Consequently, science, technology, engineering, and mathematics (STEM)-related occupations are experiencing significant growth, and most of these STEM jobs require postsecondary education.

Furthermore, the 2016 Georgetown University Center on Education and the Workforce survey points out the currently job market trend:

- Total jobs in the U. S. will increase from 140 million in 2010 to 165 million in 2020. There will be 55 million job vacancies between 2010 and 2020 due to net new jobs (24 million) and retirement (31 million) (p. 8);
- 60 percent of prime-age workers have postsecondary education or training; healthcare, community services and arts, and STEM are the three fastest growing occupational clusters (p. 13);
- Education, healthcare, and professional & business services grow fastest with over 80 percent of its workers requiring postsecondary education and training (p. 14);
- The highest job growth post-recession has been for holders with a bachelor's degree or better (p. 5).

The ongoing job revolution reflects the shifts in the transition of the economic sectors. New skills and talents are in great demand across the globe especially in newly developed professions.

An era hungry for skills

The unstoppable trends of technology revolution, globalization, and a knowledge-based economy are changing the landscape of work forces in different aspects. The domain distribution of many heavy-labored, low-skill jobs is moving south to the developing countries (where wages and benefits are lower, and in some cases worker and environmental protections are less enforced), leading to the dramatic dynamic change of human power in the north. The U.S. summit report entitled 21st Century Skills for 21st Century Jobs noted that; "America's

competitiveness and the prosperity of our people in a changing economy depend increasingly on high-skill, high-wage jobs. Realizing our potential will require investing in education and learning for all of our people throughout their lifetimes" (U.S. Department of Commerce, 1999). Not alone, the former U.K. Prime Minister Tony Blair gave the same recognition to the significance of skill development by depicting the challenge for New Labor in Britain as one of liberating people from the bondage of low skills and low expectations. He stated that, "people are born with talent and everywhere it is in chains. Fail to develop the talent of any one person, and we fail Britain. Talent is 21st century wealth" (Blair, 1999).

As local businesses extend their territories across borders, the flow of talent becomes global and mobile. The demand for high-skilled workers arises; new types of jobs emerge awaiting for candidates with the specific skill sets. Now, companies are looking for individuals with the knowledge, skills, and passion to commit to ensure the businesses' success. Thus, high-skilled workers are in great demand everywhere, especially in developed nations.

Apparently, there is a talent shortage in the global labor market (Michaels, et al., 2001; Brown, et al., 2005). The Manpower Group Talent Shortage Survey of Global Employers[2] surveyed global employers for ten years consecutively, from 2006 to 2016. In its 2016 report, it pointed out that, 40% of global employers reported talent shortages, which was the highest level since 2007. The top reasons for the talent shortage included lack of available applicants, with the desired types of hard skills (technical competencies), soft skills, and previous work experiences. As for the position employers considered as hardest to fill, skilled traders was often on top of the list, followed by IT staff, engineers, sales representatives and technicians. Recently, management positions started to appear on the top ten lists.

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[2] http://manpowergroup.com/talent-shortage-2016

Moreover, the New Talent Landscape: Recruiting Difficulty and Skills Shortages[3] in 2016, a survey examining recruiting difficulty and skills shortages in the United States as well as recruiting and training strategies organizations used to address these challenges, provided an appalling number reporting that 68% of human resource professionals experienced difficulties recruiting candidates for full-time positions in their organizations, with 59% indicating some level of basic skills/knowledge shortages, and 84% reporting applied skills deficits among job applicants. They believed the top two reasons behind a more difficult recruiting environment include the low number of applicants, and the lack of the needed work experiences among candidates. Compared to the result from 2013, in which 50% of the employers said yes to the question, the talent shortage situation had been exacerbated in three years. As to the hardest filled jobs, positions such as high-skilled medical technologists, scientists and mathematicians, skilled trades, engineering and architecture, IT staff and high-skilled technicians had been constantly on the list. A large portion of the jobs that remained vacant demands specific skill sets that are apparently not being well prepared by the education system (or, if higher education is doing this, their graduates haven't yet gained sufficient work experience to be considered for employment by these employers).

Obviously, the current economy is moving toward brain-gain approaches in which education, particularly higher education, is put in the focal point to reflect and respond to the changes in industries.

The Changing Higher Education Landscape

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[3] https://www.shrm.org/hr-today/trends-and-forecasting/research-and-surveys/pages/talent-landscape.aspx

Education has long been seen as the answer to solve multiple problems, or make the most opportunities for nations. Higher education, especially, is considered to be one of the key investments in the skill-centered generation. However, the current era is challenging the meaning of higher education in terms of the way higher education is offered, as well as applied.

The massification of higher education

The impact of globalization indeed convinced many governments that higher education is an important aspect of global competitiveness. As a result, the proportion of youth attending higher education in developed countries has been increased massively in the past few decades. The population enrolled in higher education institutions in OECD countries almost doubled between 1975 and 2000 (from 22% to 41%). Trow (2001) argued that this expansion of higher educational opportunity would be the most remarkable educational change since World War II. He analyzed the phenomenon of higher education expansion in three tiers: elite, mass, and universal. In the elite stage, the enrollment in higher education is less than 15 percent; in the mass higher education stage, enrollment is between 15 percent and 50 percent; and in the universal stage, enrollment is more than 50 percent (Trow, 1972, p. 72-73).

 In the United States, the first wave of higher education expansion occurred during 1865 to 1890 when many liberal arts colleges were promoted to research comprehensive universities. The second wave came along with the establishment of community colleges. After World War II, the third wave of higher education expansion increased the enrollment of higher education institutions up to 50 percent (Trow, 2001). Not only in the United States, many countries in Europe and Asia have gone through a similar process. However, graduates in Europe, North America and East Asia have all been negatively affected by the rapid expansion of higher education, in terms of high unemployment rate and the decreasing social mobility. As Vedder

and his colleagues rightly pointed out, around 40–50% of college graduates in the United States were doing sub-graduate work; about 52% of four-year college graduates were in jobs that match their skills, whereas 48% were overqualified for the work they did (Vedder, Denhart & Robe, 2013). The situation is similar in Britain. The UK's Higher Education Statistics Agency conducted a longitudinal study of graduates, which showed that nearly 28% of 2007 college graduates were unable to find full-time employment three and a half years after graduation.

Ironically, while the market is suffering from severe talent shortage, the highly educated population is not properly responding the market needs. Obviously, there is a mismatch between the supply and demand in terms of skills and knowledge needed for the workplace. In other words, credentialing and schooling do not equate to acquisition of what are perceived by employers to be requisite skills.

Comparing the massification of higher education and its impact on college graduate employment and social mobility, Green and Mok (2013) identified similar developments in Europe and Asia. Meanwhile, Robertson and Dale (2013) challenge the conventional wisdom that higher education provides young people with better career prospects and upward social mobility, proved by the growing number of unemployed college graduates in the context of intensified position competition among youth in the globalizing economy. Worse still, many of these college graduates bear loans for their higher education, due to the belief that they would have better career prospects after graduation. However, international research on youth employment, in general, and university graduate employment, in particular, has clearly shown that highly educated people are not guaranteed job opportunities (Brown et al. 2011; Robertson and Dale 2013).

The college credential inflation

Higher Education expansion and universalization seem to open new opportunities to "everyone" to gain graduate qualifications, and at the same time remove the problem of access to higher education for middle-class families. However, the true story is "more means less." If more people gain the qualifications previously required for professional or managerial jobs, and the number of these positions does not expand to meet the supply of qualified people, the value of the credential will decline. As a result, college credentials are losing power in the real job market.

More means less. Taking the United States as an example, the 2016 Georgetown Center on Education and Workforce biannual report reiterated that, both the Current Population Survey and the American Community Survey showed that 60 percent of prime-age workers had postsecondary education or training, while the United States Bureau of Labor Statistics (BLS) projections claimed that only 31 percent of jobs required postsecondary education and training. Despite overwhelming evidence of increasing education requirements for jobs, the BLS estimates of education required for various occupations will remain stagnant in 2020. Thus, the implication here is clear: if only 31 percent of Americans need postsecondary education as the minimum education level required for their jobs, and in reality 60 percent have received postsecondary education, that means 30 percent of our workforce is overqualified (with respect to workforce requirements). Although employers are still willing to pay more for the college degree (workers with postsecondary education earn 74 percent more than workers with a high school diploma or less), if more than half of the workforce were really overqualified for their jobs, the college wage premium would dwindle and disappear. In fact, the rate of recent college graduates who feel underemployed - working at a job that actually does not require their degree -

has risen 10 percent (41% in 2013, and 51% in 2016) (Smith, Lavelle, Lyons, & Silverstone, 2016).

The over-education issue is also threatening the shape of the labor market. For the category of high school degree entry jobs, a significant portion of better-educated workers is also employed within these occupations. More specifically, 108 of the 350 "high school entry" occupations are predominantly composed of workers with "some college" experience (Carnevale, Smith, & Strohl, 2013). That is to say, in the current economy, a college degree is not an immediate passport to a "college graduate-level" position. In fact, the majority of workforce does not depend on high skills to perform their occupational roles (Brown & Lauder, 2001). Recent global trends show that only a limited portion of college graduates is able to gain employment that requires them to directly utilize the academic content of their higher education curriculum. That is to say, college graduates may spend years before they reach employment at what they consider to be at graduate level, even for graduates from academic disciplines that are strongly vocationally related (Connor et al., 1997; Elias et al., 1999). If graduates wish to jump into the job market right after graduating from colleges, they might need to be prepared to take work positions that are not precisely what they have been preparing themselves for.

More means different. Additionally, university or department reputational capital is gaining more attention than ever. The hierarchy of universities continues to be used as a key indicator of employability (Brown & Lauder, 2001). The education system tends to reinforce rather than challenge the status quo, despite some evidence of long-range social mobility of those from working class background or the challenge to gender or ethnic stereotyping. Less prestigious universities are just not able to cultivate the personal and cultural capital required for fast-track appointments. This intensifies competitions for the "best" schools, colleges, and

universities that are judged to give access to the most prestigious (and, thus, rewarding) vocational prizes.

Credential inflation also has implications for job competition. As employers lift their entry requirements in an attempt to reduce the flood of applicants, they will tend to favor those from wealthier backgrounds that are able to meet the costs associated with and extended competition for credentials (Brown & Lauder, 2001).

The duality of the freedom of knowledge workers

In current economy, there is less need for knowledge workers to commit themselves to the same organization for decades to build a decent career. As Michaels et al. (2001) point out, if organizations depend on the knowledge and skills of the workforce, then power rests with those that have the knowledge, skills and insights that companies want. The lower demand on loyalty is leading to the redefinition of the career, from linear progression within the same organization over an extended period, to that of the boundaryless career (Arthur & Rousseau, 1996, p. 4). It is recognized that modern workers might have "careers" that involve changing jobs on a regular basis. The shift away from long-term company careers has given some members of the educated class greater economic freedom. This has enabled young knowledge workers to short-circuit organizational hierarchies to arrive in senior managerial positions often in their thirties (Brown, Hesketh, & Williams, 2003). In the knowledge-driven economy, employment increasingly focuses less on filling predetermined work roles, and more on cultivating and using skills and capacities for sustainable professional development. Individuals with talents, knowledge and skills appear to hold the key of employment (if they can satisfy employers' "needs" in cultural as well as technical/professional dimensions).

Meanwhile, the new trend is pushing companies to be flatter, leaner, and more flexible; businesses are now prone to rapid restructuring in the internationalized market. They want to do more with less: the traditional bureaucratic managerial career paths are no longer compatible with the new spirit. The decrease of commitment is mutual, both for the workforce and for the company to each other. Stable career progression that used to be the norm for decades and centuries is gradually disappearing. The shift in focus from "employment" to "employability" reflects the fact that many companies are no longer able, or willing, to offer long-term career opportunities to their managers and professionals. In view of the growing number of high-skilled workers and their flexibility, companies are taking the advantage to hold back long-term positions with sustainable benefit packages like pensions, but still expect full performance of every worker because of the enlarging pool of knowledge workers. As a result, employees at all levels of companies must remain employable even within the same job, as work roles are subject to rapid change and consistently high levels of performance are demanded of everyone (Brown et al, 2003).

Therefore, the contract of loyalty for job security, along with the prospect of career progression for white-collar workers has been abandoned, or at least reduced. Flatter structures in organizations and the fast-track appointments that become popular in the past decades have limited the opportunities of achieving relatively senior positions in the long-term. As a result, the majority of knowledge workers can only capitalize on their knowledge in employment; and even in employment, the highly educated group of workers stays vulnerable to redundancy as they could be easily replaced. Ironically, in the age of knowledge economy, knowledge workers could unexpectedly become surplus workers like low-skill workers (Brown et al., 2003).

The truth is the freedom that liberates knowledge workers from life-long commitment to a given organization has also put them in a situation of uncertainty, and the insecurity this same imposes on the workforce greatly limits their sense of freedom.

The changing rules of the hiring game

For the thriving of business, many organizations in the private and public sectors have adopted what they see as a more scientific approach to recruitment in order to ensure that they select the best candidates. This is based on recruitment techniques that seek to match individual competence with the requirements of managerial and future leadership roles within the organization. Ed Michaels et al. (2001) coined the phenomena as "The war for talent," referring to an increasingly competitive landscape of recruiting and retaining talented employees to ensure organizational success. He said,

> More knowledge workers means it's more important to get great talent, since the differential value created by the most talented knowledge workers is enormous. The best software developers can write ten times more usable lines of code than average developers, for example, and their products yield five times more profit. The shift to the Information Age is far from over. As the economy becomes more knowledge-based, the differential value of highly talented people continues to mount. (Michaels, et al., 2001, p. 3)

As a matter of fact, the war is not between industries battling for the talented workers, but rather between the educated workers. The war of talent asserts that the global knowledge economy has increased the importance of exceptional performance by exceptional individuals; being good is simply not good enough.

Moreover, the emphasis on excellence also implies the rise of personal capital. Especially for managerial level jobs, whether in the private or public sector, there is a shift in the hiring criteria from bureaucratic to charismatic personalities. Multiple stakeholders have stated that the most employable graduates are those who have a broad-based experience, and are able to sell their own personal identity, brand and profile. Employers have extended the range of managerial competence to include interpersonal sensitivity, good communication skills, persuasiveness, drive, resilience, adaptability, self-confidence, good judgment, problem-solving skills, together with creativity and business awareness (Kinash, Crane, & Judd, 2016). Personal capital refers to the extent the self can be packaged to capitalize on those personal qualities valued by employers. The self is a key economic resource: "who you are" matters as much as "what you know" in the market for managerial and professional work. The notion of "who you are" reveals the hard truth: no matter how much effort one have put in the education process, his or her family tree and neighborhood still matter. The reputation of a top university may propel its graduates to the list of job candidates; however, the stereotype of the top universities is no longer the gold standard and guarantee to be hired. One needs to combine elite credentials with other aspects of personal capital to be hired, and these critical other aspects mostly depend on the candidates' cultural inheritance. As a result, the "academic lineage" becomes more important as the social background, gender, and ethnic identity of job applicants become increasingly visible and significant for entry to managerial and professional jobs, irrespective of one's academic credentials. The boundaries between education and everyday life are collapsing. It highlights the importance of capitalizing on other "extracurricular activities" that can be used to demonstrate the range of managerial competence that organizations have benchmarked as indicative of elite employability (Brown & Williams, 2005, p. 163).

In conclusion, college graduates today face challenges and competitions that are fiercer than ever with respect to gaining employment and in striving for career development. In response to the growing concern of the emerging issue, governments in many countries have come to the focus of elevating college employability that I will further illustrate in the next section.

College Graduate Employability- Context, Concept, and Content

Context: Why Employability?

As Brown and Lauder (2011) claimed, employability captures the economic and political times we are currently living in. The current knowledge-driven economy is setting up new game rules in the increasingly competitive job market; job seekers now are expected to acquire the knowledge, skills and capabilities to meet market and employer needs. As the developed economies come to rely on knowledge-driven business, employability is seen as a source of competitive advantage because national prosperity depends on upgrading the knowledge, skills and entrepreneurial zeal of the workforce.

The tango between higher education and the economy

Brennan et al. (1996) noted that higher education plays a role in the employment system by providing job-related knowledge, competencies, and by pre-selecting students for future jobs. Nevertheless, OECD (2008) proposes that higher education is a strategic investment for the formation of human capital, as well as for building, disseminating, using, and maintaining knowledge for the economic wellbeing of the country. These statements follow the traditionally dominant human capital theory that has been used to explain returns to investment in education since the late 1950. To scholars that support the notion, it has been empirically proven that the level of education received is positively correlated with earnings. It is also a fact that university graduates earn double (or even triple) the amount of income than people who did not attend

secondary school, although wages vary across countries and are subject to local labor market forces. Neoclassical economist scholars have systematically investigated the correlation between education level and income level, and found that schooling level is indeed positively correlated with earnings. Compared with those without a college degree, young people who own higher education degrees usually have higher income and more opportunities for higher social status positions (Psacharopoulos, 1994; Psacharopoulos and Patrinos, 2004). In particular, those who hold top-tier four-year university degrees are more likely to enjoy more chances for obtaining higher occupational and social status. In this case, education-related factors – in particular, higher education attainment – are important determinants of social status.

The problem is that traditional human capital theory assumed that people enter the education system like a piece of blank paper; it does not take into account of the social construction of identity, power, cultural capital, or position conflict. In fact, the cultural capital (Bourdieu, 2000) every individual holds heavily determines and reflects the social and cultural inequalities that are difficult for those from disadvantaged backgrounds to overcome. Pierre Bourdieu's concept is helpful in explaining why those from privileged backgrounds are able to capitalize on their cultural assets within the competition for credentials and jobs. Sadly, the seemingly new and "more fair" system is in reality reproducing inequality through supposedly meritocratic competition.

Yet, although there is not a definite relationship agreed to by scholars from different perspectives, higher education and college graduates indeed play significant roles in the prosperity of nations within the knowledge-based economy. As the market is rapidly changing, it is expecting to utilize education and training to provide solutions through a mix of formal qualifications and personal skills. According to the neoliberal ideology that swept the world,

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higher education, in particular, should provide its graduates the skills that allow them to meet the market needs required for developing a knowledge economy and a learning society (Psacharopoulos, 1994, 2004; Morrow, 2006.).

The impact of neoliberal ideology on higher education

The impact of neoliberal economic policies should not be underestimated in reviewing the tension between higher education and the job market. As Kandiko (2012) indicates, the influence of globalization on higher education can be viewed through a neoliberal ideology lens; this encompasses ideologies of the market, new institutional economics based on cost-recovery and entrepreneurialism; accountability and new managerialism (Ball, 1998). Neoliberal economic policies in higher education are characterized by the growth of capitalist and corporate influence. "In the neoliberal model higher education is ideally integrated into the system of production and accumulation in which knowledge is reduced to its economic functions and contributes to the realization of individual economic utilities" (Morrow, 2006, xxxi).

As Giroux (2002) points out, "academic disciplines gain stature almost exclusively through their exchange value on the market, and students now rush to take courses and receive professional credentials that provide them with the cachet they need to sell themselves to the highest bidder" (p.27). There are privileged fields such as STEM favored by the market, leaving out social sciences, humanities, and fine arts. A focus on the market value of disciplines ignores important variations in how knowledge is conceptualized and presented to students differently in a range of academic fields (Lindblom-Ylanne, Trigwell, Nevgi, & Ashwin, 2006).

Further, neoliberal-influenced policies include shifting financial burden from governments to students and their families, a focus on learning and development outcomes, and questions about whether the current curriculum is providing students with what they need in the

new knowledge-based economy, which requires workers with the capacity to learn quickly and to work in teams in reliable and creative ways. The commercialism in the backbone of neoliberal ideology challenges the conventional view of higher education as a public good, and rather views it as a private good, a term which is usually indicative of commodities for trade (Stromquist, 2002). As a result, industry or employer perspectives and demands of certain skills are highly emphasized in universities, and college graduate employability thus makes it to the top of the priority list of higher education goals globally.

The job skill mismatch

There is enlarging gap between the demand and supply of skills in the global labor market. In the words of Stasz *et al.*:

> Many believe that the workplace has changed dramatically in response to a new
> competitive business environment that is marked by flexibility, fast response time,
> and managerial and technological innovations. This new workplace is thought to
> require workers with higher and more varied skills, particularly general skills such
> as problem solving; unfortunately, schools are not perceived [at least by employers]
> to be producing students who have such skills. The result, it is commonly argued, is
> a 'skills' gap that threatens ... productivity and competitiveness. (1996, p. 2)

The mismatch between skills being provided by many higher education programs and the skills required in the job market is not a new problem. A large body of economic, business, and educational research on this issue stretches back decades. Over the past twenty years, the problems associated with talent declines in the workplace have only grown in size and complexity. The broad cultural disconnect has brought many countries to the point of a critical skill structure collapse across their economies. U.S. unemployment has been high since 2008.

However, the true extent of employment contraction of the United States economy has been obscured because millions of workers have left the job market. By the end of 2012, 8.9 million Americans of working age were no longer part of the labor market, often because they lacked the skills for 21st-century jobs. In 2016, the Center on Education and the Workforce at Georgetown University reported that, since the 2008 recession began, 5.6 million workers with a high school diploma or less have lost their jobs. Yet an estimated 6.8 million vacant jobs exist across the economy. While it seems that skilled talent abounds, in reality, knowledge workers are at a premium. The International Monetary Fund (IMF) estimates that 25 % of U.S. unemployment is structural. This is equivalent to three million jobs.

Under the neoliberal ideology, higher education is not only for pure research advancement; it is also expected to bolster the economy. Correspondingly, employers' views are embraced by disciplines in the concept of employability. Thus, one critical question would be: What do employers expect for the college graduate? Studies in the 1990s and earlier showed that although employers considered an undergraduate experiences to be beneficial, they doubted its efficacy as a preparation for work. Likewise, employer organizations often criticize the standard of new graduates, saying that they leave higher education without enough business sense, understanding of the real world and readiness for work (Archer, Davison, Tim, Nick, & Greenhalgh, 2008). A recent report titled "Falling short? College learning and career success," indicates that just 14% of employers think that most of today's college students are prepared with the skills and knowledge needed to complete a significant applied learning project before graduation, while another 53% think about half of them are prepared (Hart, 2015). After all, college graduates seem to be ill-prepared for the real world of working life. There is evidence of gaps between the perspectives of students, graduates, employers and higher education personnel

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in how to approach the overall higher education experience for heightened employability (Chuang & Hu, 2012; Coopers & Lybrand, 1998; Gordon, 2013; Harvey et al., 2002; Harvey, 2005; Knight & York, 2001, 2003, 2004).

So, what are the employers really looking for? The concept of employability assumes that business success depends on the knowledge, skills, and commitment of the workforce. Now companies are doing more with less. There is little sense of cultivating people over time as they focus on the perennial short-term. In this atmosphere, employers have become impatient with the young and indifferent to the old. Younger, full-time students, other than those who have had a significant placement (internship) experience in their programs, often leave university with little idea of the nature and culture of the workplace and find it initially difficult to adjust. This period of adjustment is a cost that employers are no longer able or willing to bear. Thus higher education programs are now expected to better prepare graduates for workplace culture. Beginning workers must be "oven ready" and be ready to "hit the ground running." The traditionally heavy-emphasized training programs for new employees, which allowed graduates months for learning the ropes, are largely reduced, and this proportion might decline further because of the changing culture of industries.

Kinash and Judd (2016) surveyed Australian college students, graduates, and employers and indicate that:

- 86% of employers consider good communication skills to be important, yet many employers are dissatisfied that graduates can express themselves effectively;
- Soft skills such as team working are also vital and even more important than most hard skills, although numeracy and literacy skills are considered essential by 70% of employers;

- 65% of international employers indicate that having overseas professional work experience makes graduate more employable.

In the report, Kinash and colleagues (2016) conclude that, while some employers see room for colleges and universities to improve in terms of ensuring that graduates achieve both field-specific and cross-cutting knowledge and skills, they are nearly twice as likely to feel that there is a need for improvement in helping graduates gain cross-cutting skills and knowledge (81%) than in ensuring they gain field-specific skills and knowledge (48%). They also indicate that the most employable graduates are those who have a broad-based experience, and are able to sell their own personal identity, brand and profile (Kinash et al., 2016).

Overall, employers are looking for graduate with disciplinary knowledge, skills and attribute that makes them ready for the transition to the world of work. And the concept of college graduate employability precisely captures the essential elements of all these expectations.

Emphasis on employability as the global higher education trend

Although there is a tension between academics that believe that employability is a key university mission and, in stark contrast, those who believe that a focus on employability erodes the culture and achievement of higher education, supporters like Oliver (2010) insist that "the vast majority of colleagues who engaged with this fellowship were convinced of the moral purpose of graduate employability - that it is our obligation, not just aspiration" to embed employability throughout the curriculum and the full student experience (p. 7).

No matter what perspective academics holds toward employability, governments around the globe have been embracing the concept for decades.

The UK National Committee of Inquiry into Higher Education (Dearing Commission, 1997), reflecting employer organizations, suggests that:

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... Institutions of higher education [should] begin immediately to develop, for each

programme they offer a "programme specification" which... gives the intended outcomes

of the programme in terms of: the knowledge and understanding that a student will be

expected to have on completion; key skills: communication, numeracy, the use of

information technology and learning how to learn; cognitive skills, such as an

understanding of methodologies or ability in critical analysis; subject specific skills, such

as laboratory skills. (p. 36)

In the United Kingdom, since the 2000s, there has been an increasing responsibility put

upon higher education institutions to ensure that their graduates have the opportunities to

develop the key employability skills necessary to find work of an appropriate level given their

education. The Department for Innovation, Universities and Skills (DIUS) issued a statement

saying, "We want to see all universities treating student employability as a core part of their

mission. So we believe it is reasonable to expect universities to take responsibility for how their

students are prepared for the world of work" (DIUS, 2008, p. 6). In 2010, the Secretary of State

for Business, Innovation and Skills also claimed that, in the face of financial constraints imposed

by the recession, "the truth is that we need to rethink the case for our universities from the

beginning. We need to rethink how we fund them, and what we expect them to deliver for the

public support they receive."

Nevertheless, in the United States, Robert Reich, Secretary of State for Labor in the first

Clinton administration, argued that advanced economies need two sorts of high-level expertise;

one emphasizes discovery, and the other focuses on exploiting the discoveries of others through

market-related intelligence and the application of interpersonal skills (Reich, 2002). Reich

discussed the latter sector, noting that oftentimes, the entrepreneurs and professionals in different disciplines possess knowledge and also soft or generic skills that enable the disciplinary base to be deployed to optimal effect, which takes place in the learning-by-doing progress in innovative workplaces. Another is the higher education system. From this notion, higher education is an important means through which professional knowledge and other critical skills and attributes are cultivated, regardless of the subject studies. In other words, higher education is the factory of brain and talent for the rising knowledge economy. It is expected to produce high-skilled workers to meet the need and elevate national economic competence.

As for Europe, on the occasion of an anniversary of the Sorbonne University in Paris in 1998, the ministers of education of France, Germany, Italy and the United Kingdom declared that they would establish a "harmonized" structure of study programs and degrees. Guy Haug (2004) examined this important step of European higher education reform and concluded that the Bologna Process reflects concern about the global competitiveness of European higher education in the world (p. 196), promoting student mobility, competitiveness and employability. The reform has had a strong and positive effect on the debate about the relationship between higher education and the economy, in particular concerning the preparation of graduate for future employment. Haug (2004) further explained that the Bologna Process is seen as underpinning national plans promoting employability for the following reasons. First, several countries stress that employability has been a guide or baseline in national EU higher education policy and see the recent reform as reinforcing it. In Sweden, the collaboration of HEIs, professional, and economic circles is seen as generalized, natural, and easy response to the needs of the surrounding society. Similar attitudes exist in other Nordic countries. Secondly, for countries where qualifications have confirmed acceptance by employers, the main emphasis is on the

adjustments to specific market need, especially in view of the growing skills and labor shortages. Third, in some countries, employability is seen as a particularly important national priority as a response to high graduate unemployment rate, such as by Italy, Spain, and Greece. Moreover, the European Council of Lisbon has further reinforced such an approach in March, 2000, which set the EU goal to become the "most competitive and dynamic knowledge-based economy in the world" by 2010. These reforms are driven by the same basic motivation of responding to the employability and skills agenda in a developing European labor market, with higher education policy agendas being "less and less autonomous, and more and more driven by the employment aspects" (p. 190).

Concept- What Is Employability?

Defining employability

To start with, employability is clearly not the same as employment. Being employed means having a job, while being employable means having the qualities needed to maintain employment and progress in the workplace. Employability refers to (perceived?) fitness, while employment rates reflect the operation of labor market that tends to compound the disadvantage experienced by certain groups of graduates. Nor do [labor markets or employers?] place all employable graduates in graduate jobs: employability may improve graduates' chances of getting graduate-level (or any) jobs but it does not assure them.

Employability is a contentious concept, and also a multi-faceted concept whose definition is far from having achieved consensus by scholars. Many are defining employability from different angles. Hillage and Pollard (1998) of the Institute for Employment Studies wrote a report on developing a framework for policy analysis on employability for the Department for

Education and Employment (DfEE) of The United Kingdom. Their findings indicated that, for the individual, employability depends upon: 1) assets in terms of knowledge, skills and attitudes; 2) the way these assets are used and deployed; 3) presentation of assets to potential employers; and 4) the context within which the individual works, e.g. labor market, personal circumstances (Hillage and Pollard, 1998).

An important message from the notion above implies that, being in possession of employer-relevant knowledge, skills and attitudes is not enough for an individual to move within the labor market, and to realize his or her potential. Workers need to be capable of exploiting their assets, of marketing them and selling them (and having access to a labor market that has relevant opportunities). Thus, Hillage & Pollard define employability as "the capability to move self-sufficiently within the labor market to realize potential through sustainable employment" (1998, p. 1).

Moreover, Brown *et al.* (2002) claim that the definition should consider real life labor market conditions. Therefore, they define employability as "the relative chances of finding and maintaining different kinds of employment" (p. 9). By "relative chances," Brown et al. identify a number of influencing factors in the employing process, including the program choices made by individuals, the institution attended, and an employer's preferences [and the nature of the local, national, and global economy?] in regard to the composition of the workforces.

Furthermore, Knight and Yorke (2001) consider the concept of employability to be a "synergic combination of personal qualities, skills of various kinds and subject understanding". They define employability as "a set of achievements - skills, understanding, and personal attributes - that make individuals more likely to gain employment and be successful in their chosen occupations"(p.74). Like Brown *et al.* (2002), they also add some notions onto the

definition clarifying that employability is probabilistic for many extraneous socioeconomic variables contributing to the employment process; the choice of occupations is likely to be constrained; and the gaining of a "graduate job" and success in it should not be conflated (Knight & Yorke, 2003, p. 5).

Overall, the emphasis is on developing critical reflective abilities, with a view towards empowering and enhancing the learner. Employment is a byproduct of this enabling process (Harvey, 2005).

An alternative view

Typically, the literature on graduate employability can be divided into two perspectives: the mainstream one that is supported by the majority of policymakers; and the alternative view that criticizes the individual, consensual and empowering quality of employability, and views employability as a structured issue by opportunities and inequalities.

The mainstream camp uses the term employability to describe the individual content that makes a individual person successful in the labor market. This line of reasoning is highly influenced by human capital theory. Scholars like Becker (1964) argue that there is a strong causal relationship between the post-war growth in productivity and the expansion of higher education. In this regard, education, training or skill acquisition is viewed as individual investment; employability thus resembles an investment project. In this sense, embracing employers' perspective or seeking analogy with the entrepreneur seems to be appropriate. In the late capitalized global economy, individuals are assumed to be responsible for their own labor market position and success, as skills and abilities are the main factors of value in the labor market. Employability becomes the measure of how well the individual succeeded to match their human capital profile to the market demand.

Yet, other scholars question and criticize the mainstream's assumption and regard employability as relational, contextual, and most importantly, conflictual (Tholen, 2015). From their perspective, employability is structured by opportunity and inequalities, not purely by the individuals' human capital. Hesketh (2003) indicates that while the economy changed in the last few decades, it has not led to an age of employee empowerment or unbridled opportunities for university graduates. As mentioned above, the new rules applied to the hiring game demand graduates to compete using more than their skills and abilities, as how they act and assimilate to the stratified social structure are taken into account as well. Brown, Hesketh, and Williams (2004) point out that in graduate recruitment, "personal capital," a wide range of various personal qualities, increasingly matters. Again, this is highly related to the higher education expansion over the years; when the pool enlarges, employers could set the bar higher; personal "qualities" of individuals such as social, cultural and economic background that are not supposed to be salient are ironically significant again.

Based on the phenomena noted above, the alternative view serves as an important reminder of weighing the social and economic structural impact in defining the content of employability in the global context, as it is fundamentally embedded within social contexts and the rigid power relations within current economy.

In recent years there has been a shift in terminology away from skills. Hinchliffe and Jolly (2011) offer a critique of "skills-based lists" for understanding employers' definitions – they suggest that scholars should be interested in defining the "graduate experience" against, values, intellectual rigor, performance and engagement. They agree with Hagar and Hodkinson (2009) that there is no simple "transfer of skills," but instead it is a process of 'becoming' related to graduate identity. Hinchliffe and Jolly conclude that: "universities and government would be

better employed promoting student employability indirectly through the promotion of graduate identity and well-being (through the provision of opportunities for functioning) rather than directly through employability skills" and that "employers themselves are not unsympathetic to this approach" (2011, p. 582).

The definition dilemma actually brings diverse assumptions, approaches, and models while countries are addressing the employability task.

Content - Defining Knowledge, Skills, Competency, and Others

Although there is nearly no consensus in the definition of employability, some frequently mentioned terminologies such as skills, knowledge and competency could still serve as helpful concepts in understanding the qualification development of graduates. In this section, I will go through the discussions of these commonly used terms in the field for understanding the concepts and practices of employability development.

Skills

Inspired by the Dearing Report (NCIHE, 1997) and the English White Paper on Higher Education (Department of Education and Skill, UK, 2003), skills have been in the focal point of employability. In the Dearing Report, key skills consist of four components: communication, numeracy, information technology, and learning how to learn. The Department for Education and Skills (DfES) adds teamwork and problem solving to this list.

Other scholars regard skills from different angles. Coopers and Lybrand (1998) define 'employability skills' in terms of four key areas: 1. Traditional intellectual skills, e.g. critical evaluation, logical argument; 2. Key skills – communication, IT, etc.; 3. Personal attributes – motivation, self-reliance; and 4, Knowledge of organizations and how they work.

There is another school of scholars emphasizing the significance of transferrable skills. Brown (1999) believes that learning, and the transfer of that learning, is most likely to be effective if the learning situation closely resembles the work place. Knight and Yorke (2000) believe that if there is any hope of transferring the learning from one context to another, the learner needs to use that learning in a variety of different situations. They further argue that there is more to employability than skills. There are substantial theoretical objections to the idea that there are skills, as well as to the corollary that they are transferable (Knight and York, 2004, p.24). Overall, it would seem that practice in a number of contexts is fundamental for the development of employability skills and attributes.

The UK Cabinet Office distinguishes three categories of skills:

- **Generic skills**: the transferrable skills that can be used across all occupational groups. These include what have already been defined as Key Skills - communication, application of numbers, problem solving, team working, IT and improving own learning and performance, reasoning skills, work process management skills, and personal values and attitudes such as motivation, discipline, judgment, leadership and initiative;

- **Vocational skills**: the specific technical skills needed to work within an occupation or occupational group;

- **Job-specific skills**: local functional skill, or employer-wide skills (PIU, 2001, p. 119)

However, academics [and teachers←NEEDED?] in higher education may not use the same language, nor refer to the same things. Guile (2002) argues that when claiming that the concept of "generic skill is a much more complex issue than has been acknowledged and therefore presents curriculum planners with considerable problems"(as cited in Knight & Yorke,

2004, *p.29*). Another approach to differentiate various skill sets in the employability domain is to address hard and soft skills (Archer & Davidson, 2008).

- **Hard skills**: discipline and field specific skills;
- **Soft skills**: transcend disciplines and are such capacities as interpersonal skills, communication, critical thinking and problem solving.

Although there is not a (set) definition of skill in the field, the common emphasis on skills across different studies leads to the approach of using skills auditing as a useful tool for embedding employability in the curriculum. The use of skills experience and development as a measure of employability also forges an easy connection with the personal development planning (PDP) initiative – alongside self-awareness, reflection and action planning.

Furthermore, there is also disagreement about the extent to which universities carry responsibilities and capacity for developing students' technical (hard) skill. Some argue that an overemphasis on such skills erodes the purpose of higher education and the distinction between higher education and vocational education. There is a concern that taking a skills-based approach to higher education will eradicate generalist and/or value-based degrees such as humanities, theology, arts and social sciences (Newman, 1982).

Knowledge

Moreover, there is a debate in the context of understandings, otherwise referred to as knowledge (Oliver, 2011). Some scholars believe that learning is over-compartmentalized in higher education. These people believe that students should be taught a wide range of subject matter and emerge as learned scholars. Some of the stated rationales are that a broad-based undergraduate education will develop contributing citizens who can then specialize through postgraduate degrees and/or on-the-job. Furthermore, authors argue that largely due to technological advancement, careers are transforming so rapidly that many of the careers that

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exist at enrollment will no longer be viable by graduation. A broad-based education also supports change, meaning that graduates are prepared to transition between careers. The dissenting voice is that a well-planned discipline-specific [or professional field-specific] iterative curriculum is necessary to assure that graduates can viably succeed in the workforce. In short, some academics believe that spending time on generalist learning outcomes means that graduates will be ill-prepared for their roles in the workplace and thereby not employable.

Competency

Spencer and Spencer (1993) view competency as a characteristic of an individual that is causally related to job performance. Competencies can be accumulated within an individual and represent a capacity to perform at some future point. In a workplace context, competency is a combination of cognitive skills, and personal or behavioral characteristics, which are a function of an individual's personality. Some studies suggest that employers of graduates now place major emphasis on generic, behavioral competencies, both in the recruitment of graduates for employment, as well as their performance on the job (Raymond, McNabb & Matthaei, 1993; Weisz, 1999). As a consequence, undergraduate courses must seek to develop these competencies in order to meet the needs of business (Haber, 1993). Tiwari (2012) indicates that the link between competencies and employee performance is very strong. The fundamental propositions that can be made are as follows:

- Competency-based applied learning will contribute to the academic knowledge, problem-solving skills, work attitudes and general employability skills of an individual.

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- Provide individuals with coherent and rigorous content aligned with challenging standard relevant technical knowledge and skills needed to prepare for emerging professions.

- Skills and Competence would lead to a higher degree of employability.

Tas (1988) defines competence as performance of duties based on one's ability to accomplish specific job-related tasks and assume the roles connected to the position. As mentioned earlier, college degrees nowadays could only get graduates on the candidate list; it is the competencies and capability that really get the hired and thrive on their jobs.

What Works to Enhance College Graduate Employability?

In theory

Harvey (2006) points out that there are four broad areas of activity that higher education institutions are engaged in to help develop student employability:

1. Embedded attribute development in the program of study, often as the result of <u>modifications to curricula</u> to make attribute development, job-seeking skills, and commercial awareness explicit or to accommodate employer inputs;

2. Enhanced or revised <u>central support</u> (usually by way of the agency of career services) for undergraduates and graduates in their search for work, to which can be added provision of sector-wide resources;

3. Innovative <u>provision of work experience opportunities</u> within, or external to, programs of study;

4. Enabled <u>reflection</u> on and recording of experience, attribute development, and achievement alongside academic abilities, through development of "progress files" and "career management programs."

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These four broad areas of development activities have in the past tended to operate in relative isolation from each other. In some areas, especially on "thin sandwich" courses (that is, programs with embedded and frequent periods of work placement or clinical practice), the integration of work experience, embedded employability development, and reflection on achievement is more marked.

At the core of the employability debate is whether the teaching of employability skills should be embedded or built-on. Skills are best developed when they are integrated across the curriculum and students are given the opportunity to develop higher levels of skills as they progress through the program of study (de la Harpe et al., 2000). By embedding these skills (not just skills but also attributes) it gives them the same status as knowledge and obliges lecturers to cover them; however, built-in options ensure that skills are covered competently (Tait & Godfrey, 1999). Knight & Yorke (2001) feel that by having separate key skills modules where the skill development is not fully integrated into the curriculum, key skills – and by association, employability, are being trivialized and ghettoized. For the most part then, the development of employability skills and attributes should be integrated within the curriculum.

Recently, there is a trend toward a more holistic approach to employability development across institutions. The cultural change in higher education has seen a shift toward central support services working with program staff to help develop attributes as part of the curriculum and maximize reflection on an array of work experiences. Self-promotion and career management is no longer a separate activity but increasingly integrated into the program and linked to career planning and recording achievement. This is important, as graduates must be able to do more than just sell themselves; they have to be able to perform in a job once they are recruited. Conversely, potentially good performers also need the skills to get a job in the first

place. Emphasis is also being placed on learning to learn, through programs, with a shift in pedagogy from "knowing what" to "knowing how to find out," and through reflecting on work experience (Harvey, Locke, and Morey, 2002, p. x).

In practice

In recent years the United Kingdom has been pushing to ensure their college graduates develop the key employability skills. In 2008 the Department for Innovation Universities and Skills (DIUS) claims, "We want to see all universities treating student employability as a core part of their mission. So their students are prepared for the world of work" (DIUS, 2008). While the labor market outcomes of graduates has been measured by the Higher Education Funding Council for England (HEFCE) since 2001, the mechanisms for delivering employability skills learning have varied considerably across HEIs and different subjects within them, from stand-alone modules to full embedding into existing courses, as well as work placements and experiential learning.

Higher education establishments in the UK have been active in developing the employability agenda, not only in skills development but in linking it to pedagogy, and ensuring that employability is embedded in the curriculum and that there is an integrated approach across the institution (Harvey, Locke, & Morey, 2002; Harvey, 2005). In the late 1990s, skill development was the dominant approach adopted by institutions. However, as analysis of employer needs and graduate attributes became more sophisticated, there has been a shift away from "skills" in a narrow sense of a few specific key skills. The shift in higher education is from attribute development in specialist modules or extracurricular activity to a more holistic approach that embeds employability as part of academic learning. The USEM model implemented through the *Skill Plus Project* since the 2000s represents this particular approach. As indicated by model

founders Yorke and Knight (2004), the USEM model as was "an attempt to put thinking about employability on a more scientific basis, partly because of the need to appeal to academic staff on their own terms by referring to research evidence and theory" (p. 37). It recommended that academics might take the four key components of it and ask to what extent each was being developed, in order to form a generic analysis.

The USEM model

To address the connection between employability and learning, Knight and Yorke (2004) propose the USEM model, interpreting employability as constructed by four broad components:

- **U- Understanding, or knowledge,** is a key outcome of higher education. The disciplinary knowledge, especially tacit knowledge, and skills acquired in higher education institutions;

- **S- Skills,** including key skills;

- **E- Efficacy beliefs**, students' self-theories and personal qualities – these are of critical importance being the extent to which students feel that they might be able to make a difference

- **M- Metacognition**, encompassing self-awareness regarding the student's learning and the capacity to reflect on, in and for action. Knowing what you know, knowing how it can be used, and knowing how you get new knowledge. Without metacognitive, you would be professionally frozen and act on the basis of what has worked in the past rather than think analytically and reflectively about what it would be best to do.

Such model has been the practical definition of employability for the Skill Plus Project implemented by Department for Education and Employment (DfEE) and HEFCE of The United Kingdom since 2000. Graduates Prospect (2010) in another study that investigated the role of

each element in the USEM model. They portrayed that efficacy beliefs were found to be critical elements in constructing image and self-confidence among graduates and the ability to tolerate failure from the job processes. USEM is a useful starting point from a curriculum audit or curriculum design perspective.

In 2007, as part of UCLan's Centre for Employability research, CareerEDGE emerged. This "practical model of employability" was designed to "explain the concept of employability ... to students and their parents ... [and] to be a useful tool for lecturers, personal tutors, careers advisors and any other practitioners involved in employability activities" (Pool & Sewell, 2007, pp. 5-6). For example, the University of Central Lancashire (UCLan) has developed an institutional approach founded upon the model. It seeks to ensure that employability is embedded into all courses, underpinned by a range of bolt-on development opportunities provided centrally through 'futures,' the UCLan employability service (Hendy-Isaac, 2012, p.23).
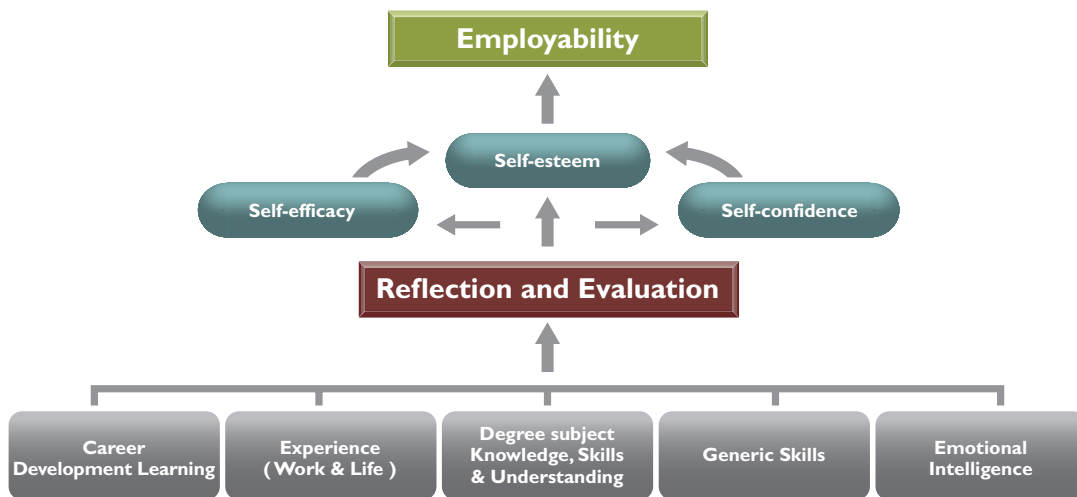
Figure 1.1: CareerEDGE model. From Hendy-Isaac (2012), *p.23.*

No matter what model or approach is used, curriculum design is usually the focal point when it comes to employability development in higher education institutions. Discussion across learning and teaching practices, assessment, work-based and work-related learning, staff engagement, pedagogy and strategy are some of the essential elements in the process.

Another salient success of employability building within higher education is Switzerland, with its vocational education and training (VET) system, and professional education and training (PET). To account for VET and PET's differing levels of education, VET is positioned as upper-secondary, while PET is tertiary. While other European countries struggle to deal with high unemployment rates, Switzerland stands out with its high wages (GDP per capita around 84,700 US in 2013), advanced innovation (first in the INSEAD Global Innovation Index in 2014), and low unemployment, especially youth unemployment rate (ILO reports 8.6% in 2014). Renold and colleagues (2014) compare the youth labor market situations in Switzerland, Spain, Greece and the EU 28 in 2012 and indicate that Switzerland's youth labor market situation is above average with higher values for indicators regarding working conditions, study-work transition smoothness, and activity state (e.g. unemployment rate, relaxed unemployment rate). They further point out that Switzerland's success in integrating adolescents into the labor market encompass two main aspects: first, the dual-track VET, which combines learning at school and in host companies and prepares them for the labor market; and second, incorporation of companies' involvement in the training process.

Swiss society holds high respect for all professions. Relatedly, unlike a lot of other countries that view vocational education as the "dumping ground," the VET track appears to be attractive to Swiss youth (Renold *et al.*, 2014) and evidently leads to thriving youth development in a holistic approach. The various tracks available in Swiss education system allow flexibility

for students' choice, and it encourages combination of know-how and knowledge by the strong dual system that incorporates senior industry practitioners.

In addition, Ursula Renold, head of a research center for comparative education system at the Swiss Federal Institute of Technology (ETH), and director of Switzerland's competence center for professional education, universities of applied sciences, and innovation since 2005, whose work on the linkage between education and employability heavily impacts Swiss employability building policy suggests the utilization of the Business Competency Cube as examining gradates' employability. The Business Competency Cube suggests that there are three sets of competences that a graduate should possess to accommodate the business world needs:

- Professional Competency, including

  o Recognizing customer needs

  o Negotiation of products & services

  o Knowledge of alternative and competing products

  o Knowledge of trade that's pursuant to course structure

  o Standard and objectives of the enterprise

  o To keep Informed of trade-related developments

  o Operational / management procedure

- Social Competency, including

  o Situation-sensitive behaviors

  o Stress management

  o Discretion

  o Responsibility

  o Flexibility

- Communication Skills

- Conflict management skills

- Positive performance attitude

- Adequate learning skills

- Ecological-oriented conduct

- Self-awareness

- Teamwork skills

- Transfer abilities

- Appropriate social manners

- Negotiation skills

- Communicating personal principles

• Methodological Competency, including

- Analytical and well-planed Procedures

- Working / Operating Methods

- Methods in Decision-Making

- Methods for Creativity

- Working with Source Materials

- Methods of Presentation

- Methods in Problem Solving

- Project Management

- Negotiation Techniques

- Sales Techniques

- Network-Minded

       o   Setting of Goals and Priorities

   The competencies listed above are concrete and practical that educators or career service personnel could use as criteria and curriculum objectives as they intend to prepare college graduate for the real world of work.

As this dissertation/chapter attempts to explore the essence of building college graduates employability, Swiss successful experience of positioning graduates for appropriate jobs certainly will shed light on the possible alternative of today's higher education system.

Conclusion

Higher education in the current economy bears its very unique generational responsibility. Indeed, higher education should not merely address labor market needs; rather, the contents of employability encompass critical attributes that are leading to the wellbeing of a young professional, her/his community and society, as well as the world. A more holistic approach is greatly needed in this general consensus of placing employability as one of the focal points in higher education. Employability building toward a more holistic approach certainly should inspire scholars, educators, and policy makers to rethink the vision and landscape of higher education. I will use a holistic framework as the guide to this study examining college graduates' employability building, which I will elaborate in chapter three.

Chapter Two: College Graduate Employability in Taiwan

Overall Background of Taiwan

History and Politics

Taiwan is an island located in eastern Asia and the western Pacific, with 36,000 square kilometers of land, and 23 million people who call it home. Ninety-eight percent of the population is Han Chinese, the descendants of immigrants from the various provinces of mainland China since the 17th century who are often referred to as *Taiwanese* (70% Holo and 15% Hakka), and immigrants that moved to Taiwan with the Republic of China (R.O.C.) government in 1949, who are generally referred to as *mainlanders* (15%). The remaining 2% are indigenous people from 14 aboriginal tribes.

Taiwan had a long history of colonization ruled by the Dutch (1624-62), China (1662-1894), and Japan (1894-1945). After 50 years under Japanese colonial governance, at the end of World War II, Taiwan had returned to the R.O.C. in 1945 under the leadership of the Kuomingtang (KMT). In 1949, the R.O.C. government, headed by Chiang Kai-shek moved to Taiwan after its defeat in the civil war on the Chinese mainland and began to consolidate its centralized power of party-state and to maintain the dominance of mainlanders over Taiwanese. The government declared Martial Law to maintain its political stand and national security, and to continue its Sino-centric hegemonic governance. For the next forty years, political opposition was suppressed, and academic freedom was hindered as well. In 1987, due to the booming economy, an era of political stability and continuous social movements pursuing democracy, martial law was finally lifted (Chen, 2013).

Democratization, pluralism and liberalization in politics and the economy have become core values since then. The Democratic Progressive Party (DPP) became the major competitor to

the KMT. The first direct election took place in the late 1980s; from that time on, Taiwan has established its foundation as a democratic civil society and had peaceful power transfer between parties, from the KMT to the DPP in 2000, ending the 50-year one-party rule. The governance went back to KMT in 2008; and in 2016 DPP won the presidential election. Now Taiwan is proud to have its first female president in its history.

After the Sino-Soviet split and the ensuing rapprochement between the Americans and the communist regime in Mainland China, the R.O.C. government was forced to withdraw from the United Nations (UN) in 1971. As a result, Taiwan became one of nine "countries" in the world that are not member of the United Nations. This was a significant turning point for the international status of Taiwan. In 1979, the United States formalized its diplomatic relations with the People's Republic of China (PRC), and thereafter many other countries followed suit and withdrew their diplomatic relations with Taiwan. Years later, Taiwan earned its place as a member of the World Trade Organization in 2001. Although Taiwan strives to open its door to the international market, diplomatic plight resulting from the One-China Policy is hindering Taiwan's path back to the UN, and also an equal position from which to compete with other nations. PRC under the leadership of the Chinese Community Party (CCP), the Mainland China government, has never hesitated in announcing its determination to resolve the "Taiwan issue" by military force if necessary. While Taiwanese consciousness has been strengthened over the years through the development of Taiwanese-centered history, culture and dialects in the 1980s and 1990s, the PRC insists on its One-China Policy and opposes any movement toward complete independence of Taiwan. The very issue of the national identity of Taiwan emerges constantly with increasing cross-strait interaction and communication; the PRC is also manipulating the diplomatic isolation of Taiwan in the international society. While China is actively signing

bilateral agreements regarding its economic, cultural, educational trades with other countries,

Taiwan is still struggling with its survival strategies in the global market.

Education and Culture

The education system in Taiwan has gone through a series of establishments and reforms.

In 1945, when Taiwan was returned to the R.O.C. governance, the National Meeting of Post-War

Education was held and started implementing strategies of decolonization and "education for

nationalism" in schools by prohibiting the use of Japanese and Taiwanese languages in school.

Mandarin then became the official language (Chen, 2005). In 1968, as the economy grew, the

education system in Taiwan advanced considerably; compulsory education was extended from

six years to nine years, and the number of schools and students enrollment at all levels increased.

After martial law was lifted in 1987, education has gone through the process of liberation.

Besides traditional Chinese culture and Western culture, indigenous culture started to draw more

attentions and had become prevalent in Taiwanese culture. In the 1990s, some influential

grassroots education movements took place and pushed the bureaucratic Ministry of Education

(MOE) to carry out a series of education reforms. In 1994, the Commission of Education Reform

(CER) was established in response to social movements demanding education reform; it has

identified the major directions for nation-wide governmental reforms. The education system in

Taiwan is heading towards a bottom-up decision-making approach, encouraging decentralized

and site-based management.

The illiteracy rate declined from 12.7% in 1980 to less than 2 % now. The current

education system basically supports 22 years of education, from Pre-K to college. The gross

enrollment ratio at the elementary and middle schools has remained above 97% since the late

1970s. Moreover, senior secondary (high school) education and higher education were expanded in the 1980s and 1990s to accommodate more than 5.3 million students. In 2014, compulsory education was extended to twelve years to enhance educational development. This implementation aimed to enroll about 70% of 16-18 year old teenagers in high schools, vocational schools or five-year colleges under the Open Admission Program. Overall, the prevalent education system in Taiwan has been well developed and serves as a significant foundation for Taiwan's economic growth [and what other outcomes?].

Economy

The Taiwan miracle: an old time story

In 1950, Taiwan was still a less developed country with per capita GNP of US$170. By the 1992, Taiwan's per capita GNP, adjusting for purchasing power parity (PPP) had risen to US$20,000. Meanwhile, Taiwan's economic structure has shifted emphasis from agricultural to industrial production in the 1960s, and changed again from production of consumer goods for export to more technology-intensive products after the 1980s.

Since then, Taiwan has transformed itself into one of the newly industrialized countries. Foreign trade has been a major factor in Taiwan's rapid growth. The value of exports grew rapidly during the 1960s, and the value of trade roughly tripled every five years and increased nearly six-fold between 1975 and 1995. Today, Taiwan has a dynamic capitalist economy with gradually decreasing state involvement in investment and foreign trade. Formerly a brand name export, labor-intensive industry country, now Taiwan has also become a major investor in many other Asian countries. Taiwan's current GDP is US$1,147 billion, ranking 26th in the world, and

its GDP by purchasing power is US$1.075 trillion, placing it at 20th in the world ranks (International Monetary Fund, 2016).

The so-called Taiwan Miracle refers to the rapid industrialization and growth in the second half of the 20th century. Although the most rapid development of the economy springs from 1960s, the prevalent growth actually established its base prior to the end of World War II. The Japanese colonial governance had introduced public and compulsory education in Taiwan. Many believe that this was a significant foundation for driving the rapid economic growth that followed years later.

The impact of industry and economy model shifting and the massive downturn

Taiwan's labor market worked well for several decades. In the beginning of the 21st century, after years of prosperity, a global economic downturn, combined with increasing bad debts in the banking industry, pushed Taiwan into its first recession since 1947. The big picture has a lot to do with the industry structure and model change, education expansion, and the political and diplomatic dilemma facing the island.

Fields (2007, p. 37) adopts a pseudo-cohort analysis to show that Taiwan's labor market was actually at its most efficient between 1980 and 1992. This is demonstrated by the low unemployment rate, rapid improvement in its employment mix, the rapid rise in earnings for all workers, and flexibility for workers to migrate rapidly from low-productivity sectors to high-productivity sectors to improve their incomes and living standards. Fields claims that it is the highly integrated nature of the labor market that makes this outstanding performance possible.

As mentioned above, the Taiwanese government vigorously expanded the education system, especially higher education, starting from the 1980s; as a result, the education level of the workforce experienced a sharp rise in the following years. Surprisingly, the sudden growth in

the supply of skilled workers did not narrow the wage gap between skilled and unskilled work. Fields & Kraus (2007, p. 60) explained that it was, again, largely because of the highly integrated nature of the labor market, which provided skilled workers with the opportunity to accept low-skilled work if the labor market conditions were not promising and then shift back to more highly skilled work when conditions improved. They also point out that the hands-off labor market policy approach adopted by the government prior to 1996 contributed to the achievement of such efficient [??] operation.

However, starting in the post-1996 period, the deterioration in labor market performance brought policy makers' and scholars' attention to the changing nature of the Taiwanese labor market. There has been a rapid shift in the industrial structure in recent years, from employment-friendly (e.g. labor intensive) industries to those that are less friendly (high-tech industries, such as integrated circuit (IC) producers). Unlike traditional industries, newly developed high-tech industries created very few jobs and shifted Taiwan into a situation of jobless economic growth, a condition whereby the economy continued to grow but there was little growth in the number of jobs being created. In other words, the globalization of Taiwanese economy since the late 1990s hastened the rate of change in the industrial structure of the island; consequently, increasing numbers of unemployed workers were now being found in the category of structural unemployment, comprising those workers whose skills and knowledge had become obsolete. Wu (2007) argued that the high unemployment rate in the post-1996 period was caused by the paradox of a simultaneous labor surplus and labor shortage due to the rapidly decreasing need for low-skill, labor-intensive jobs as Taiwan was competing with Mainland China's cheap labor (p. 131). The manufacturing sector, which used to be the major absorber of the surplus labor, became saturated and unable to absorb any more surplus workers from the sector.

Since the early 1990s, the impact of globalization on economic, social, political and cultural fronts has attracted much scholarly attention. Globalization and the evolution of a knowledge-based economy have caused dramatic changes in the character and function of education throughout the world. Some scholars point out that, while the outside world requires the labor market to be flexible enough to adjust to the changes, the Taiwanese government has adopted a much more interventionist approach, imposing not only increasingly invasive regulation of the labor market, but also excessively high standards. The results are greater rigidity in Taiwanese labor market and higher direct labor cost to Taiwanese employers (Lee, 2007, p.7).

The globalization of the Taiwanese economy has extended the labor market beyond national borders. A growing number of Taiwanese employers have relocated their production facilities abroad in search of lower labor costs, and some of their employees have been sent from Taiwan to operate their overseas subsidiaries.

However, although limited numbers of jobs are being created within the high-tech and knowledge-intensive service industries, such as the finance and banking sectors, these jobs require high levels of education and training qualifications which the newly displaced workers from the manufacturing sector do not have. Although there was some expansion in higher education during the latter part of the 1990s, the type of education being provided was not designed to meet the needs of these displaced workers. Thus, the expansion of the education system at that point was unable to play the same role that it had played in the 1970s and 1980s. Additionally, higher education expansion in the 1990s was limited to four years of college, university and postgraduate studies, but not to technical schools, junior colleges and recurrent

adult education. As a result, the education system could not better accommodate the needs of the displaced workers and fix the overall imbalanced demand and supply of labor.

<center>**Higher Education in Taiwan**</center>

The Track to Universal Higher Education in Taiwan

Looking into the history of development, higher education has been acting as an important character in bringing Taiwan to the developed country list. As Taiwan advances itself on the list of industrialized countries, the demand for knowledge workers expands as the economy grows. The impact of globalization has convinced many governments around the world that higher education is an important aspect of global competitiveness. To enhance competitiveness, the Taiwanese government, as well, has attempted to invest in higher education in order to nurture professionals with high levels of innovation, creativity and skills that meet the critical challenge of the knowledge economy and the globalized economy.

Higher education has thus been through extensive development in the past few decades in Taiwan. Regarding the development of higher education in Taiwan, Chen (2002) identified five distinct periods: the initial development period (1949–53), the establishment period (1954–71), the control and regulation period (1972–85), the deregulation and open period (1986–93), and the multiple autonomy period (1994– present).

The first university in Taiwan, *Taihoku Imperial University,* was established in 1928, under the Japanese colonial government. After WWII, the ROC government renamed it *National Taiwan University* in 1945. In the next ten years, only three other colleges joined the list of higher education institutions, and most of them focused on vocational training. Chen (2002) argues that the main goal of the initial development period was to control the number of HEIs and maintain social stability.

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In the second period, the first expansion of higher education took place to correspond to the developmental need of the state. Twenty-four universities and colleges were established between 1954 and 1962, and in the ensuing ten years, the government installed sixty-two vocational colleges to meet the human labor need due to industrial growth. Overall, the emphasis of the establishment period was to encourage private-sector investment along with focusing on the needs of economic development.

After the expansion, problems like a lack of qualified faculty and facilities began to emerge; thus, the Taiwanese government enacted more restrictions on the establishment of private colleges. Between 1973 and 1985, only seven new universities and colleges were installed. The control and regulation period witnessed the establishment of the Higher Education Act and a renewed focus on monitoring the quality of private HEIs.

1985 marked the beginning of the deregulation and open period, which led to a rapid expansion of higher education that continued for the next two decades. From 1986 to 2006, the number of Taiwanese universities and colleges went from 105 to 164, or a 55% increase (Table 2.1). In 2016, Taiwan had a total student body of over one million undergraduate students in 158 higher education institutions. Also, there were over 170 thousands students in an assortment of master's programs, and nearly 30,000 students in doctoral programs (MOE, 2016). As for the enrollment rate, in 2016, 95.5% of high school graduates entered college or university for further education.

	1949	1956	1961	1971	1981	1986	1991	1996	2005	2012	2016
Universities	4	11	16	23	27	28	50	67	147	120	126
Colleges	2	6	14	73	77	77	73	70	17	42	32
Total	6	17	30	96	104	105	123	137	164	162	158

Table 2.1 : Number of HEIs in Taiwan, 1949-2016. Source: Ministry of Education, Republic of China (2007)

These numbers represent an increase of nearly double of the undergraduates, suggesting a very rapid expansion of higher education. Trow (2005) suggests that when the higher education enrollment rate surpasses 50%, a system would be classified as universal. Consequentially, UNESCO (United Nations Education, Scientific, and Cultural Organization) lists Taiwan as one of the countries with universal higher education, along with the UK, the US, Canada, Spain, etc. The small Pacific-Asia Island has created another type of Taiwan miracle in education.

The expansion of higher education lays an important foundation for significant economic growth. Taiwan has been keen in transforming its industrial structure from a labor-intensive, agricultural, and low-skills oriented economy to an innovative high-tech and knowledge based entity. The distinct economic achievement is based on its strong technological advancement. Since the late 1970s and 1980s, some leading companies have produced cutting-edge products in computers, information technology, semiconductor, or manufacturing sectors that boosts the further growth of Taiwan's economy. Higher education and the high-skill knowledge workers prepared by universities and colleges are definitely important assets of this achievement. The developing track of a knowledge-based economy in Taiwan ties higher education and industry together in a cooperative yet tense relationship in that even though higher education strives to maintain its academic autonomy and unique mission, it needs to be responsible for the comprehensive prosperity of the society (Cheng & Jacob, 2012).

Besides, the traditional Confucian perspective that highlights academic pursuit and considers scholars to be the top of the society acts in concordance with expansion. Most of the parents in Taiwan consider obtaining college degrees as the effective approach for facilitating social mobility, bringing their offspring to the white-collar class. The expansion has accelerated competition among universities to improve the overall quality of education providing prospective

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high school graduates with more choices, and also improving opportunities for younger generations to gain college degrees. Ironically, as higher education is opening its doors to people, college degrees are turning into one of the general prerequisites for job applications; therefore, the value of a college degree is changing.

The More the Merrier? The Plight of Careless Higher Education Expansion

Some alarming statistics and reports reveal the plight of college graduates in the current economy.

Myth 1: College degrees guarantee decent jobs (Truth: The devalued college degree)

In 1970, half of the 20-24-age population (49.7%) was college students. In 2016, while the total number of the particular age group shrank by 25,700 since 1970, the enrollment rate had risen to 81.4%. As for the graduates, the number of higher education graduates (including doctoral and master programs) in 1990 was near 130 thousands; twenty-five years later in 2015, the number bounced to close to 310 thousands, an over double growth. More means less, and this translates into the fact that a college credential in Taiwan is weakening its value in the job market.

As the college credit inflation trend goes global, Taiwan is reaping the same ugly result as many other countries. The universalization of higher education has changed the landscape of higher education in Taiwan. In 2007, high school graduates only needed to score 18 out of 400 points in the Advanced Subjects Test to be enrolled in a higher education institution. The access to higher education has not only been universalized, but was even "basicalized." College degrees became one of the prerequisites for many positions that used to hire people without higher education degrees.

The Ministry of Labor in Taiwan announced its latest survey of young labor in 2016, pointing out the trend in Taiwan's labor market. Compared to twenty years ago (1996), nearly 30% more of the 15-29-age cohort held college degrees. College degree holders made up 58.3% of the labor force in 2016. The average wait period before their first job appointment after graduating from college was 2 months. Fifty-one percent encountered difficulties in the job searching process, mainly due to lack of experience (30.1%), and uncertainty about what job to apply to (28.8%).

While the numbers seem to bring some hope, some other statistics still reveal the difficulties facing Taiwanese college graduates. According to the Budget, Accounting and Statistics Department in Taiwan (2016), between 1978 and 2014, the unemployment rate of the 20-24 age-cohort was one of the fastest risings among groups of unemployed people. In 1978, the unemployment rate for the 20 to 24 age-cohort was 3.8%; in 2009, it exceeded almost 15%; and in 2016, it was still at an alarming level of 12.6 %. The unemployment rate in the 15-19 age-cohort was fast rising before 2000; however, in the first decade of the 2000s, it has stabilized and decreased to 8%. The third highest-rate unemployed group in 2014 was the 25-29 age-cohort. The unemployed rate reached 8.78% in 2009, then it decreased a bit to 6.76% in 2014. Compared to other groups, the younger generation, namely graduating college students and recent graduates, is being confronted with a harsher unemployment challenge compared with other age groups.

Moreover, the overall unemployment rate in 2016 was 3.9%, which is slightly higher than the previous year (3.8%). However, when looking into the unemployment rate by education attainment, college (or above) degree holders have the highest unemployment rate for the past ten years; it climbed to 9.3% in 2008, and the percentage gradually declined to 4.84% in 2016.

Still, college graduates experience a higher unemployment rate compared with other lower education achievers.

Not surprisingly, the average salary of those with college degrees has actually decreased in recent years. According to the Department of Technological and Vocational Education, Ministry of Education (2006), the average monthly pay of vocational high school graduates is NT$30,000, which has remained the same for the past ten years. However, postgraduate degree holders' average monthly salary has dropped from NT$51,000 to NT$25,540. When the global financial tsunami hit Taiwan in 2008, the unemployment rate among degree holders was even worse than among high school graduates. When universities produce more graduates than what the [Taiwanese or global?] market needs, the employability function of education disappears.

A study investigating youth unemployment in East Asia in 2012 reveals that Taiwan's youth unemployment rate, especially for young people between 20 to 24 years old, was clearly higher than that of other countries on the list (Table 2.2).

Country/Area	Age	Unemployment rate (%)
Mainland China	21-25	9.8
	26-30	8.5
Hong Kong	20-29	5.3
Taiwan	20-24	13.2
	25-29	7.1
Singapore	Below 30	5.1
South Korea	20-24	9
	25-29	6.6

Table 2.2: Youth employment rate in selected East Asia countries in 2012. Source: Mok, K. H. (2016)

Furthermore, when comparing graduate unemployment of Taiwan with that of China and Hong Kong, it is clear that Taiwan has recorded relatively higher graduate unemployment. It is reasonable to speculate that one of the critical reasons accounting for the high proportion of graduate unemployment in Taiwan is closely related to the universalization of higher education

(over 90% enrollment of the high school graduating class) when compared with Mainland China and Hong Kong (Mok, 2016).

The statistics point to the plight facing Taiwanese graduates, that the assumption that college degrees bring decent jobs (or, perhaps, any employment) is no longer a reality. It requires more than a degree for college graduates to thrive in the current economy.

Myth 2: Higher education promotes social mobility (Truth: the stratification of higher education)

In the various sectors of the university system, private universities and colleges have grown much faster than public ones, especially after the deregulation of higher education in the 1980s. In 2017, of the total number of 158 Taiwanese higher education institutions, 51 are public and the other 108 are private institutions. Private college and universities are more than double the number of public ones.

	Total number of students in HEIs	Number of students in private HEIs	Percentage of students in private HEIs
1960	26,735	6,607	24.7
1970	92,850	48,684	52.4
1980	153,088	91.285	59.6
1990	239,082	139,709	58.4
2000	564,059	385,550	68.4
2010	1,021,636	744,746	72.9
2016	1,309,441	871,761	66.58

Table 2.3: Number and Percentage of Students in Private Universities. Source: Ministry of Education, Republic of China (2016)

	Universities	Colleges	Junior Colleges	Total
Public	48	1	2	51
Private	78	18	11	108
Total	126	19	13	158

Table 2.4 : Numbers of public and private HEIs in Taiwan, 2016-2017. Source: Ministry of Education, Republic of China (2017)

Cheng and Jacob (2012) indicate that the massive expansion of higher education does not necessarily parallel equal access to higher education. Moreover, Chen (2009) and Tseng (2004) found that in Taiwan, students of upper socioeconomic status are more likely to study in academic universities than in vocational ones. Furthermore, the new university entrance program that was started in 2002 is often criticized for putting socially disadvantaged students at further disadvantage.

In addition, the higher education expansion has reproduced social inequality. The established public universities enjoy competitive advantages that they have accumulated through the years by receiving a lot more government funding. With the help of a unified national college entrance examination, public universities always get the "better" students. Ordinarily, students got to "choose" their university, based on the result of a common examination. Today, though the college entrance system has been modified, about eighty percent of freshmen still enter colleges through the national examination. This makes it very difficult for private universities, especially the newly established ones, to "catch up" since they receive little government subsidy and charge higher fees, while at the same time they cannot offer a better quality education. Obviously, the private institutions and students from less privileged backgrounds are often left out in the resource competition game. The unattended result contributes to the widening gap between existing social classes instead of increasing social mobility, which was the original goal of the higher education expansion movement.

Through the Plan to Develop First-class Universities and Top-level Research Centers, students are offered more resources and the twelve elite universities have agreed that the subsidy to these students would be up to US$10,000 regardless of the social advantages of the students at these elite universities. Luoh (2002) argues that the government has offered more subsidies to students from well-off backgrounds; the poor can no longer climb the social ladder through education. Consequently, the gap between the poor and the rich is enlarging in Taiwanese society. Wu (2008) also found that, as a consequence of the same plan, the expenditures of individual students at elite universities, such as National Tsing Hua University and National Taiwan University, have increased by NT$30,000 (US$1000) and NT$16,000 (US$533), respectively from 1999 to 2006. During the same period, the expenditures per student in other universities, such as National Changhua University of Education and National Kaohsiung Normal University, have decreased by NT$87,000 (US$2900) and NT$14,000(US$466).

Furthermore, the competition between higher education institutions is shaking the quality of university education. As many countries move toward a mass system of higher education without a significant increase in funding, there are fears that teaching quality could decline as a consequence (Skelton, 2005). Higher educational reform in Taiwan has taken a path similar to other parts of the world. According to Wu (2008), the average expenditure per student covered by individual universities dropped from NT$ 213,401 New Taiwan dollars (NT$) in 1996 to NT$165,178 in 2004. Even though the average expenditure per student rose to NT$175,263 in 2006, it is still much lower than what was [offered←spent?] in 1996. For this reason, universities are also required to find their own financial resources. While the private sector is used to finding resources on its own, public institutions are having difficulty adjusting to the new setting. At the same time, the tuition gap between students in public and private HEIs is relatively large. In

recent years, the government has increased the subsidy to private HEIs. However, the subsidy is still a relatively small amount for most private universities. Even though the subsidy to private HEIs has increased, the average subsidy to individual students has been reduced as a result. In terms of the graduates' career prospects, it is found that employers still favor graduates from elite universities. Because of the increasing number of both BA graduates and those with postgraduate degrees, the latter have been preferred.

Myth 3: Higher education prepares knowledge workers for advanced industries (Truth: the classroom-workplace gap)

According to the 2016 Manpower Group talent shortage survey[4] of global employers, 73% of employers in Taiwan expressed difficulty filling their staff positions, more than in previous years. The level of difficulty Taiwanese employers experience ranks second in the world; only Japan (86%) was higher.

The discrepancy between employer expectation and the skills college graduates possess hinders these potential knowledge workers from being placed in the job positions they originally looked forward to. Simultaneously, employers who are eager for talented employees do not find that recent graduates are fully prepared in the skills and knowledge required by the changing demands of careers. Nearly 30% of employers are not satisfied with their newly graduated employees (Youth Developmental Administration, MOE, 2009). Out of six points (Likert scale), the average employers' satisfaction with college graduates was 3.76.

In terms of the discordant expectation for college graduates between job seekers and industries, some national surveys reveal valuable hints. While over 90% of college graduates think higher education has cultivated their "understanding and willingness to abide by the

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[4] 2016/ 2017 TALENT SHORTAGE SURVEY
http://www.manpowergroup.com/wps/wcm/connect/389b7a9d-cfe2-4b22-bd61-f0febc709cd6/2016_TSS_Global_Infographic+-+Final.pdf?MOD=AJPERES&amp

professional ethics" and "stability and resilience in professional career," less than half of the employers acknowledge college graduates possess these attributes. Moreover, when asked of the most important attributes for professional success, college graduates rank the top three as professional knowledge (63%), English proficiency (46%), and dedication and being responsible (34%); in contrast, cooperation skills (15%) and character (9%) are lightly valued by students. However, the employers actually hold an almost opposite perspective on the attributes. Some of the top-choice employers indicate that specific skill sets are relatively easy to build up within a short period of time; what they are really looking for is actually good character, humble and mature attitude toward work, and professional ethics. Employers consider college graduates' integrity, positive attitude, malleability and willingness to learn, problem solving ability and stability and resilience more important than knowledge and techniques (Cheng, 2011). However, compared with the observations of their newly hired graduates, the employers do not think the recent graduates perform well enough on half of them; especially on stability and resilience, and their problem solving skills. The average score recent graduates get from their employers is 68.6 (out of 100), which is not very appealing to their new bosses.

Consequently, in 2016, only 56.6% companies surveyed are opening positions for recent graduates; compare with 75.8% in 2015; the rate has rapidly declined 19 percentage points. The main reasons include absence of positions for recent graduates, previous negative experience hiring recent graduates, and lack of real world experiences. In addition, the economic recession is still weakening employers' desire to invest in new employee training. Echoing the neoliberal world trend, employers are looking for employees that are "oven ready" and ready to hit the ground running. While employers express dissatisfaction with their employees, the critical question will be: what are Taiwanese employers actually looking for?

Cheng (2012) investigated the satisfaction level of employers with hiring college graduates and the most desired attributes for these employees. The study indicates that, among the 802 companies surveyed, 34.3% of the employers were satisfied with their newly hired recent graduates; 46.2% considered them fair, and nearly 20% were not satisfied or very much not satisfied with their new recruits. Regarding employees' attributes that employers considered as most expected and critical, nine core attributes that over 95% employers emphasized made the list:

- Integrity

- Positive work attitude

- High malleability and aspiration to learn

- Problem solving skills

- Team work ability

- Stability and resiliency

- Understanding and observing professional ethics and rules

- Communication skills

- Basic computer skills

Chuang (2011) compiled the national survey data on college graduate and employers, which indicate a similar result:

- Dedication and positive attitude toward work

- Stability and resiliency

- Team work ability

- Communication skills

- Understanding and observing professional ethics and rules

- Problem solving skills

- Professional knowledge and techniques

- Basic computer skills

1111 Human Resource Bank, a private job matching website, continues to monitor companies that use their service for recruiting new employees regarding their perspectives on the criteria for hiring. Through the years, some attributes remain the focal emphases:

- Related work experiences (2013: 70.8%; 2014: 79.4%; 2016: 59.76%)

- Positive personality and character (2013: 41.51%; 2016: 45.30%)

- Professional knowledge and skills that match the position requirement (2013: 39.23%; 2014: 58.10%; 2016: 67.13%);

- Degree or professional concentration (2014: 25.78%)

- Professional certificate (2016: 53.50%)

As for the most desired but not satisfied attributes, the employers pinpoint:

- Professional knowledge or skills the position requires (2012: 75.42%)

- Resiliency (2013: 58.76%)

- Communication (2013: 38.43%)

- Dedication and positive attitude toward work (2013: 50.44%)

- Ambition and ability to learn (2012: 44.96%; 2013: 47.63%)

- Problem solving skills (2012: 27.56%; 2015: 19.01%)

- Innovation (2015: 14.61%)

- Time management (2012: 14.34%; 2015: 12.64%)

Apparently, a gap exists between employers' expectations and the (perceived) skills possessed by recent graduates.

The Structural Problem

To be fair, the expansion of higher education alone should not be the only factor to blame for the plight facing the college graduates. There are a few structural issues the Taiwanese government is currently striving to deal with that are impacting the competitiveness of college graduates in the globalized market. Besides the impact of globalization and the economic downturn that have resulted in structural unemployment in Taiwan in the past two decades, Taiwanese are facing another even more crucial phenomenon: the low fertility rate.

Population growth in Taiwan was at its highest in the mid-20th century, but it has been steadily declining since then. The latest estimates indicate that Taiwan's population will peak at 23.4 million in the next ten years and then gradually begin to decline. The total fertility rate in 2016 is 1.029 children per woman, which is the lowest in the world. In 2016, about 208 thousands babies were born in Taiwan; compared to the number 204 thousands in 2006, 325 thousands in 1996, and 414 thousands in 1981; the rapid decline is worrying both the government and the scholars. To keep the population stable, fertility rate needs to reach at least 2.1 children/woman. The birth rate in Taiwan is now below the rate needed to sustain the population size. It is not difficult to imagine how the low rate is causing the society's social, economic, population and even political risk.

Year	1975	1980	1985	1990	1995	2000	2005	2010	2015
Birthrate	2.8	2.5	1.9	1.8	1.8	1.7	1.1	0.9	1.0

Table 2.5: Average Birthrate in Taiwan between 1975 to 2015. Source: National Statistics, Republic of China (2016)

As a result, HEIs are gradually facing student recruitment problems, especially for the lagging private institutions. In addition, joining the World Trade Organization has meant that foreign institutions may eventually be able to set up branches in Taiwan. Therefore, HEIs that do not perform well enough to attract a significant number of students face a great challenge.

College Graduates at the Crossroad

The Wandering College Students- "I Don't Know What I Want."

Under the extreme pressure of the unified College Entrance Examination, high school students in Taiwan strive to earn high scores to get into their desired institutions as well as majors and programs. After they finally advance to colleges and universities, a lot of students only want to relax and start to pay little attention to their academic pursuits. In Mandarin, the pronunciation of the word *university* in English is similar to *Yo-Ni-Wan-Si-Nian (由你玩四年)*, meaning four years for free play and fun, implying no more hard work and serious study in colleges. Some news articles that report the declining positive attitudes of Taiwanese college students are worrying educators and policy makers. Even in top universities, many students are used to being late or absent for the morning classes, sitting in the back rows in the classrooms, and surfing the internet and checking social media during class sessions.

Mok (2015) used questionnaire surveys to examine how university students in Hong Kong, Taipei [i.e., in Taiwan] and Guangzhou, three major cities in the Greater China region, to evaluate students' job prospects and perceived social mobility. In Taipei, when asked whether the opportunities for upward social mobility among college students were declining, 52.3% of the respondents agreed, 29.3% strongly agreed, 13.9% had no opinion and only 4.8% disagreed.

Furthermore, a national survey of Taiwanese college students and graduates in 2008 is revealing a concerning portrait of university students: 54% of the students surveyed spend most of their daily time on video games and surfing the internet purposelessly; only 15% show interests for and spend time on academic pursuits, while another 15% spend most of their time

working (Tian-Hsia Magazine, 2008). Another survey in 2009 points out that 42% of Taiwanese college students do not know what they will do after graduation (Tian-Hsia Magazine, 2009).

The mindset probably could partially explain the relatively low rate (40%) of anticipating direct employment after college education. As only 36.1% of college students feel "confident" or "very confident" in future job hunting. It makes it easier for scholars to understand the stunning number of postponed graduations in recent years. In 2016, more than 48 thousands college students chose to defer graduation; the number once hit over 55,500 in 2012 (Department of Statistics, Ministry of Education, Taiwan, 2016). Previous research has shown that during an economic downturn with a high unemployment rate, people tend to enter higher education institutions to advance their degrees and to wait for economic recovery (Albert, 2000; Berggren, 2006). In Taiwan, the structural economic recession and the students' perceived unpreparedness for future careers collectively create a group of "campus Peter Pans" that hesitates to join the workforce in real world.

Hence, scholars and educators are concerned about the competency of college graduates in the intensifying competition of the global market. A 2011 report indicates that nearly 8% graduating students *never* thought about career planning. For the other students, more than 60 percent did not even *consider* career planning until the last year of college. Only less than 30% started career planning in the first two years, or before they enter college (Youth Developmental Administration, MOE, 2011). Compared to college students in countries like Japan, where college students start career planning and internships, or even interview for positions, in the third year of college, Taiwanese college students tend to start career exploration and planning late.

The Clueless College Graduates- "I Don't Know What I Can Do."

Aligned with the global trend, the previous discussion on the devalued college credential in Taiwan indicates that a large number of college graduates are uncertain about their future while college degrees no longer guarantee social mobility. Theoretically, with the increasing development of the Taiwanese economy, the educational attainment of the workforce has also become correspondingly higher. As a result, young people in Taiwan, especially college degree holders, have become less willing to accept the difficult, dirty and dangerous (3D) jobs. However, in the meantime, the imbalance of supply and demand between the higher education institutions and the labor market, and the gap between the skills expected by employers and those prepared for in higher education studies, result in graduates' job mismatch. About 27% of employed recent college graduates are in fields that are not related to their majors in college (Youth Developmental Administration, MOE, 2010).

In 2008, Tian-Hsia Magazine, a Taiwanese media outlet with high public credibility, conducted another survey focusing on Taiwanese college students' career-readiness. The study indicates that 90% of college students feel anxious about their future; 96% of the students think the workplace they are about to step into will be very competitive and aggressive. Besides, 64% of college students do not think the college education prepared them to be career-ready, and only 6% of them consider college curriculum to be very helpful for their future careers. For the majority that consider themselves "not ready," 69% of college students think it's because they did not work hard enough in college; still, 52% of the students think the college curriculum does not connect with the real world of work. The knowledge and skills they learn would not be helpful in their career. Over 90% of college students are not satisfied with the overall college experience, mainly because of the gap between the college curriculum and employing

organizations' demands; this reflects the lack of confidence of college graduates for their employment.

Taiwanese Government's Policy Intervention

So, what went wrong in the four (or more) years of higher education? While the higher education trend globally is to enhance student employability (Liu, 2006; OECD, 2000), Taiwanese college graduates seem to be struggling in finding decent jobs. What is currently being done by the state to assist graduates' transition to the workplace? In this section, I will review the policy and implementation of the current college graduates' employability enhancement programs in Taiwan.

As a matter of fact, since 2005, the Taiwanese government started to acknowledge the significant importance of college graduate employability. The Council for Economic Planning and Development in Taiwan proposed the inter-departmental project: "The Plan for Cultivating and Implementing Talent in Need[5]," claiming that government should promote five key capabilities of college students and graduates, including inter-disciplinary thinking, independent thinking and innovation, international communication, ability to learn knowledge and technology, and humanitarian concern. In 2006, The Youth Development Administration hosted the "Youth Human Power Development Conference: Boosting Youth Employment." This was the first time the concept of employability was introduced in a government document. In the conference, 4Es (employability, equal opportunities, entrepreneurship and employment creation) were applied in the "The Youth Employment Boosting Project"(YEBP) implemented in 2007 by eight government departments.

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[5] 重點人才培育及運用規劃

The Youth Employment Boosting Project is the most important government intervention policy in the enhancement of college graduate employability. There are four main aspects, thirteen strategies, and fifty-seven related policy practices. The four aspects responding to the challenges facing college graduates are:

1. Elevate college graduate employability through formal education;

2. Ensure smooth transition from school to workplace, and provide recent graduates with friendly environment for learning and professional development;

3. Resolve youth employment barriers;

4. Promote equality in workplace;

Among these four aspects, the first two are highly related to the college graduate employability. In the following section, I will elaborate on policy practices that are directly related to the focal point of this particular research through these two areas.

Elevate College Graduates' Employability Through Formal Education

College graduate unemployment and job mismatch are closely linked to the higher education global trend. Careless expansion leads to the absence of quality control, and the enlarging gap between the classroom and workplace. Thus there are two specific strategies proposed in the project centering on higher education renovation:

Emphasize employability building in higher education

In 2007, the Ministry of Education implemented the pilot project "Enhancing university career counseling for building competitive employability.[6]" This theme was restored as the "Promoting Employability in Higher Education Institution Project[7]" in 2011. These plans aim to elevate students' employability through college curriculum renovation. The *"Promoting*

6強化大專校院職涯輔導功能以提升青年就業力試辦計劃
7大專院校提升青年就業力補助計劃

Employability in Higher Education Institution Project*"* kicked off in 2008 in four pilot universities. The project aims to build college students' employability using three main approaches: career exploration, student career profile, and curriculum targeting employability building; all arrangements are to help college students get familiar with the workplace and start career [planning and] preparation effectively. Regarding the models used to promote employability in the college curriculum, the Ministry of Education suggests three approaches: 1) Offer courses targeting professional employability building within programs and departments; 2) [Merge←Incorporate?] core employability attributes and skills in current courses and curriculum; and 3) Offer courses in cooperation with general education centers for promoting students' employability.

In addition, the Ministry of Education targeted internship experience as another strategy. Central internship matching services for college graduates and students like the RICH Internship Plan were proposed in 2002, acting as the bridge between companies and the campuses.

A further important higher education curriculum renovation strategy is the implementation of the "Programs for Promoting Teaching Excellence in Universities."[8] In 2005, the program was established in response to the shortfalls of previous higher education expansion, including the decline in student learning quality, college education resources insufficiency and low teaching quality, and weakening global competency. One of the five critical elements of the plan is to strengthen students' basic skills and bolster their employability. Some universities are now beginning to plot more flexible interdisciplinary programs; others emphasize employer-faculty cooperation, internships, and place cultivation of industrial talents as their specialized feature.

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Moreover, The Ministry of Labor started subsidizing universities for establishing the "Higher Education Employability Training Program[9]," targeting students and graduates from the technical and professional track universities, to enhance students' employability through entrepreneurship, practical training, and three main aspects of courses, including professional courses, internships, and generic skill courses.

Career education

Another key policy is to strengthen the career counseling services in higher education institutions. The Ministry of Education of Taiwan encourages universities in Taiwan to provide students with career guidance, including issues of self-awareness, guidance for further education and employment, and career planning (Ministry of Education, 2012). The Youth Developmental Administration subsidized universities to offer "Career Enhancement Seminars" for providing college students with more career planning information since 2008. The general project of enhancing college graduate employability was partly focused on bolstering the career counseling system in higher education institutions.

In addition to emphasizing employability by renovating college curriculum and building a robust career service system, another Taiwanese government intervention strategy focuses on the needs of college graduates, as detailed below.

Enhancing smooth transition for college graduates

The Department of Labor hosts a series of training opportunities for college graduates in order to provide career information and actively match graduates to appropriate positions. These programs include the Workplace Internship Project and Employability Boosting Camp. The Ministry of Education, in cooperation with six other departments, promotes the Cultivation of

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[9] 大專校院就業學程計劃

Employable Youth Human Power Plan to provide graduates with internship opportunities in industries, hoping to match graduates with workplace need.

However, according to MOE (2009), about 20% of college students and college graduates said they never use any career service when they are in school. 56% of college career centers only emphasized senior career services. The predicament of college student career services primarily related to staffing and budget shortage [not to mention student interest]. On average, there are only 2.17 career service center staffs per higher education institution intending to meet the needs of tens of thousands of students. Thus, 71.5% higher education institutions reported staff shortage in the career service center or department. As for the makeup of the staff, 43.9% were full-time, 70.1%were females, and 99.4% had college or higher degrees. One significant concern was that only 18.5% of the career center staffs worked in the position for more than five years, and only 8.9% had relevant professional certification. It is not too surprising that, sixty percent of the staff members considered themselves lacking in the professional training to do the job well.

A qualitative study indicates that Taiwanese college students tend to discuss their career plans with and seek guidance from family members, friends, or senior students in the program, instead of going to the college career counseling centers (Cheng, 2011). The MOE survey (2009) suggests a similar message: only 20.9% of college students have ever used the personal counseling service in the career centers. However, interestingly, staff in college career service centers considered students' participation in personal counseling services as satisfying (55.6%). The reasons students hesitate to use career center counseling service include that they do not know what services the career centers provide, and students assume career services would not be

helpful; yet some students mentioned that they are aggressive enough in career exploration by themselves.

As for government installed career matching services, including career fairs, regional career centers, websites and career counseling (telephone) lines, although 27% to 76% of the young laborers are aware of the services (the number varies depending on the kind of services), only 4.8% to 12.8% of people really approached to the services and used them (Department of Labor, 2016).

Another potential reason college students and graduates tend not to use career counseling or job matching services lies in the traditional education culture in Taiwan. Students, since the time they are in lower grades, have been taught to solve their own problems or to go to other students before they raise hands in class to ask teachers questions. This similar mindset follows them to the college classroom. Normally, not many students ask questions or respond to instructors' discussion inquiry in class. The passive attitude keeps them from asking for help when they are at the intersection of future career development.

Employability Research in Taiwan

Twenty years ago, the Taiwanese government started paying close attention to college graduates' employability. While employability issues are often mentioned with regard to youth unemployment in other countries, the Taiwanese government and scholars tie employability closely to higher education, mainly because of the extremely high college attendance rate in recent years. Respectively, the researchers and policy makers' spotlight falls on to the college campus. The Ministry of Education's Department of Youth Development Administration, Council for Economic Planning and Development, Department of Labor (currently renamed as

the Workforce Development Agency) and the researchers have been working together to pour

[limited or extensive?] resources into strengthening college graduates employability in locating

competitive positions in terms of research and policy implementation.

The Definition and Content of Employability in the Taiwanese Context

The Department of Youth Developmental Administration under the Ministry of

Education (2006) in Taiwan defines employability as a combination of core abilities for adapting

and qualifying for various job-related demands; and professional employability, which points to

the specific industrial or positional techniques and ability. According to a national survey of

senior students, college graduates, employers, and career counselors, Liu (2006) categorizes

employability into three categories (Table 2.6), followed by various specific attributes (seventeen

attributes in total):

1.Positive work attitudes and teamwork ability that is beneficial for employment
It includes: • Positive work attitude • Stability and resiliency • Ability to work in the team • Understanding and observing professional ethics and rule
2. Sense of career planning and management, and ambition of active learning
It includes: • Malleability and will to learn • Career planning ability • Understanding about the industry and professional development track • Self-marketing and job seeking skills • Innovative ability • Leadership
3. Professional knowledge and the capability for applying knowledge on jobs
It includes: • Communication skills • Problem solving skills • Professional knowledge and techniques • Basic computer literacy • Second language ability • The ability to apply theory and knowledge to the work

Table 2.6: The content of employability in Taiwanese employability research, Liu, 2006.

Three years later, the Department of Youth Developmental Administration added "global perspective" to reflect the impact of globalization in Taiwan's labor market.

In addition, the Department of Youth Developmental Administration also list "ten general employability indicators" as the reference for educators, including:

• Communication skills

• Problem solving skills

• Teamwork skills

- Leadership

- Self-management

- Innovation skills

- Information application ability

- Career planning skills

- Career knowledge

- Global perspective

Peng (2008) utilizes a 2005 national survey's data for recent college graduates for analysis and categorizes employability into four key areas:

- General ability for workplace

- Professional ability in workplace

- Work attitude

- Career planning and confidence

Chin and Chuang (2010) apply the foundation concept Peng (2008) proposed, and incorporate the employability indicators the Department of Youth Development Administration has suggested; they theorize employability consists of four fundamental areas:

1. General ability
• Communication • Leadership • Innovation • Teamwork
2. Professional knowledge and ability
• Knowledge and techniques • Computer literacy • Application of disciplinary theories • Problem solving skills

• Second language ability	
3. Professional attitude	
• Positive attitude • Willing to learn • Professional ethics • Malleability and resiliency	
4. Career planning	
• Career development • Understanding of industries • Self-marketing	

Table 2.7 : Four foundational areas of employability. Chin & Chuang, 2010.

To conclude, the definition and content of employability in Taiwan is gradually moving toward consensus. The focal foundation was laid by the initiative investigation by the Department of Youth Development Administration. There is subtle alternation between definitions; yet most researchers acknowledge the four constituent elements of college employability.

Current Research Overview

In the past years, Taiwanese scholars and researchers have undertaken some studies that focus on college graduates' employability. Some look into the outcome of governmental policy implementation (Liu, 2006, 2009; Cheng, 2011); some examine the relationship between employability and key contributions from college experiences or curriculum (Chin and Chuang, 2010; Hsu, Liu & Li, 2010); yet others focus on the investigation of employability of certain disciplines. With regard to accountability and credibility, the studies listed here will be limited to published peer-reviewed journal articles and government policy assessment reports.

Year	Research project	Authors	Sponsor	Research method
2006	National employability survey of college graduate*	Liu, Fu-Yuan	The Department of Youth Development Administration, MOE	Survey and focus groups
2009	National employability survey of college graduate*	Liu, Fu-Yuan	The Department of Youth Development Administration, MOE	Survey and focus groups
2010	Social Psychological Factors Affecting the Employment of Graduate Students in Taiwan	Yang, King-Jang, Chen, Shun-Hsing & Fan, Hsin-I	N/A	Survey
2010	Youth employment convergence investigation*	Gue, Cheng-Chuan	The Executive Yuan	Survey
2010	The Relationship Between Learning Experience and Employability*	Chin, Meng-chun & Chuang, Ching-Pao	N/A	Survey
2011	High Graduate Unemployment Rate and Taiwanese Undergraduate Education	Wu, Chih-Chun	N/A	Survey
2011	Assessment of the Elevation of Youth Employability Project and Employability Survey*	Cheng, Ren-Wei	N/A	Survey, Focus groups
2012	A study on the Relationship between Involvement of College Clubs and Employability- The Mediating Effect of Learning Experience of College Clubs	Hsu, Yawen, Liu, wei-chun & Li, Yu-chi	N/A	Survey
2014	Examining the Experiences of Career Guidance, Vocational Self-concept, and Self-Perceived Employability among Science Education Majors in Taiwan	Wu, Ya-ling, Tsai, Yu-Lin, Chen, Cheng-Wu	N/A	Survey
2014	Employment of College Graduates in the Era of universalized Higher Education	Chuang, Ching-Pao & Hu, Joanne	N/A	Survey
2015	Massification of Higher Education, Graduates Employment and Social Mobility in the Greater China Region	Mok, Ka ho	N/A	Survey

2015	Turning University Undergraduates for High Mobility and Employability Under the Content and Language Integrated Approach	Yang, Wen-Hsien	N/A	Survey
2016	Employability and Wage compensation in an Asian economy: Evidence for Female College Graduates in Taiwan	Chiu, Shih-Yang & Chuang, Hwei-Lin	N/A	Survey

Table 2.8 : Relevant Taiwanese college graduates employability research from 2006 to 2016

*Reports written in Chinese, title translated by the authors

Evidently, many of the studies listed above were conducted using quantitative approaches, many of them using (online or paper) survey data, or focusing on single institutions' graduates. These statistical analyses did derive important facts including the trends, demographics, and differences between groups in the embarking stage of college employability research. However, a closer look into college students and graduates' experiences is definitely essential in understanding the target population's need and struggle in a more subtle way. Some of the studies did include focus group interviews as follow-up after the survey took place. The questions discussed in the focus groups were mostly derived from the survey result, and focused on career planning, employability skill importance, the discrepancy between employers' and graduates' perceptions, and graduates' responses to government's policy installation. However, critical subjects like college curriculum, employability building experiences, and graduates' personal perception regarding employability issue are not included in studies mentioned above.

The trajectory of skill and attribute building in college students' experiences, as well as job seeking behaviors and their interaction with the changing workplace, can vary immensely among individuals. Without inquiry into personal accounts, their substantial experiences could possibly be diluted in the numbers; and so could the adequate responses to their needs. Therefore, to understand and elevate college students' employability, empirical qualitative research that

focuses on the college students' and graduates' experiences in terms of employability building and job-seeking behaviors is necessary in the current Taiwanese society. This study aims to fill the literature gap, and re-envision Taiwanese higher education through the eyes of the recent graduates, and in the context of the changing world.

Chapter Three: Research Approach and Methodology

This research aims to understand the experience of Taiwanese college graduates' employability building, application for job searching, and overall perception of students' employability cultivation in their college experiences. A thorough examination of the literature in Chapter Two provides an overview of the topic area. In order to thoroughly understand how Taiwanese college graduates perceive how – and to what extent – their employability was built up, and the resources they used to get them to their current position, I apply some specific research methods and techniques to address the issue. In this section I will provide an overview of the methodology for the study.

Before diving into the research design, I will present my positionality in relation to the research subject, along with the research questions. Then I will discuss the research design of the study. Firstly, I will present an overview of the methodology for this study. Secondly, I will describe the setting and site of the research study, as well as the participant recruitment processes, selection criteria and sampling procedures. Thirdly, I will discuss the variety of sources of data and the data collection procedures. Fourthly, I will detail the procedures used to analyze the data collected during the study. Finally, I will describe the techniques I apply to increase the validity and trustworthiness of the data - collected and conclusions drawn.

Positionality

I was born and raised in Taiwan. This is an island I call home. When I was in high school, I studied very hard to earn great grades, and finally made it to the best university in Taiwan. My major was social work at that time. In my generation, social work was not a popular profession; it is known as one of the low-pay and high-pressure jobs. As a result, many of my classmates chose to double major or transfer to other more popular professions' programs, while

I chose to double major in philosophy and obtained a middle school teaching credential. When it came to the moment of graduation, I remember having a chat with a group of friends about the uncertainty of our future plans. One of my friends, who graduated with social work and business management degrees, talked about how insecure she was feeling about the challenges facing us. By the time we stepped out of the campus of the highest status higher education institution in Taiwan, less than one-third of the graduating students had started looking for jobs, not to mention securing a position. Some of my friends did not even have their résumé ready. For me, I did not remember contacting, or being introduced to, any career services department on campus. When I finally started my first job as a project coordinator in a non-profit organization, I was very surprised by how poorly the college had prepared me for the real world. Rather than relying on the knowledge I acquired during my coursework, I found myself calling on skills gained from previous experience in extra-curricular activities to help me adjust to the workplace.

A few years later (2004), I volunteered as a college student counselor in a Christian church fellowship group I started to participate in after college. Reflecting my life journey, those years as their counselor were probably the most well spent time in my young age; it was a privilege to gain the opportunity to work with these young men and women at their critical turning points towards independence. Everyone brought in different life stories; some of them were really tough. However, the most challenging struggle often came at the moment these young people finally finished their education, and prepared to step into another phase of life. Well, ready (prepared) or not. I heard many stories of how these graduates could not locate their first jobs even though they were considered high-achieving students in school; and how they could not meet the requirements of the workplaces or found it hard to adapt to the workplace culture so they decided to quit. I regularly heard these students tell me the same story: most of

them found their learning back in college to be obsolete, in terms of the knowledge accumulated in classes. When attempting to apply that knowledge to their job, they barely knew anything about the workplace reality, and the company had to train them for the skills and techniques required for their positions.

Ten years after that experience, I am physically in another continent doing my doctoral study. However, the struggles of current college students and graduates are still of concern to me. At the moment we, as a family with three children under the age of 8, need to decide whether we will move back to Taiwan in the near future, and news headlines like "college graduates start first jobs with only NT$22,000 (US$700) monthly wage" and "unemployment rate between 25-29 year olds raised to the new peak" struck me. The situation facing the next generation is challenging, even more challenging than the previous ones. The Taiwanese society is facing an economic downturn and risk of a fast aging population is threatening the wellbeing of citizens, especially those in the middle or lower social classes looking for a chance of social mobility. The issue of college graduates employability is certainly one of the central concerns of Taiwanese higher education among government officials, university leaders. As revealed in the literature review, while some scholars are already paying attention to the issue, there is an unstudied missing link in the picture: college students' and graduates' voices were not addressed enough, as in-depth qualitative investigations looking into their experiences and struggles on the transition, in terms of employability building within their college education, are scarce. As an educator, a researcher, and a parent, my concern and worries pushed me to dig into the graduate employability issue and make me eager to hear from the graduates' own voices regarding their perspectives on how higher education experience prepares them for the challenging career transition awaiting their departure from college.

Research Questions

The main focus of this research is to understand Taiwanese college graduates' employability cultivation, in terms of whether and how Taiwanese college graduates are prepared for the knowledge, skills, and competencies for the fast changing world of work in Taiwan's particular social and economic contexts. To address the gap revealed through the literature review, this study focuses on the graduates' narratives and their perceptions of how college experience, including the formal curriculum, work-related engagement like internship or apprenticeship, extra-curricular activities, and career counseling contributed (or not) to the formation of competitive employability. In addition, this study also attempts to re-envision higher education in a fresh way that could extensively accommodate college students and graduates' professional and developmental needs in a more holistic approach.

I have laid out the following research questions for a deeper understanding of how Taiwanese college students' employability is cultivated in their own voices**:**

Research question: How do Taiwanese college graduates perceive the role of higher education in their preparation for transition to workplace professionally and developmentally?

Under the main question, there are two sub-questions:

1. How do Taiwanese college graduates perceive the way their college experiences prepared them for employability, in terms of knowledge, skills and competencies?

2. Do Taiwanese college graduates perceive a gap between their preparation in college and the needs in professional life? If yes, how is the gap being addressed?

These questions highlight the current career plight facing Taiwanese college graduates through their experiences. While previous literature offers general pictures of college graduate employability building with numbers by surveys, this study attempts to dig into graduates' personal accounts in search of feasible and practical solutions for Taiwan higher education.

Theoretical Framework

Employability is a multi-faceted construct with both internal and external dimensions. The prevailing state of the external labor market is significant in terms of employability. Internal factors for job hunters include job-related knowledge and skills, and mastery of job search strategies, together with the potential to learn new skills on the job. In this study, I focus on college graduates' perception on how their college experiences prepare them for the transition to the workplace and build employability that meet the workplace needs. The term of college experience contains numerous and varied experiences that take place in higher education institutions or circumstances related to them. Here in this study, employability is referred to as: *academic curriculum and other class activities; work related involvement, e.g. internship, apprenticeship, part-time or full-time jobs, etc.; extra curriculum activities and social networking; career services and applicable university career trajectory program; and other college related experiences indicated by the research participants*.
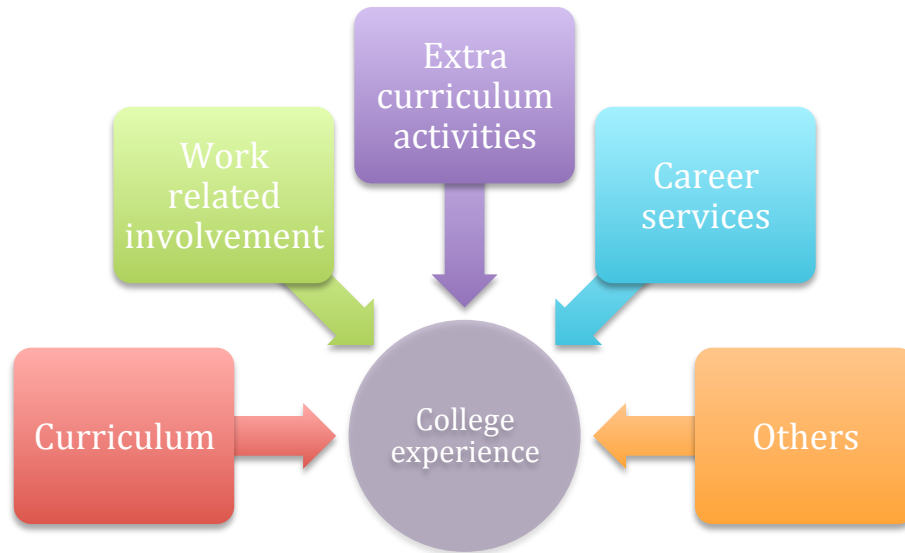
Figure 3.1: The definition of College Experience

From the developmental perspective, the transition from studenthood to professional career is a significant phase in life. An individual's career pathway progresses throughout the lifespan. Arthur et al. (1995) suggested the following aspects of knowing, which individuals need in order to respond to shifting opportunities of employment. First, *knowing why*: overall commitment and adaptability a person brings to the employment situation including anticipating change in the organization, driving their own learning and self-improvement, while considering family and other non-work circumstances. Second, *knowing how*: the skills or knowledge a person brings and learns in employment settings including formal classroom learning, self-study and on-the-job activities. And third, *knowing whom*: a person's interpersonal relationships and contribution to their own and an organization's networks. The construct of career development is insightful in terms of understanding the process of college graduates' experiences in terms of elements within or outside of college curriculum; it also fits well with the various aspects in the employability concept discussed above.

Moreover, career guidance aims to promote the adequate career development of individuals. Therefore, the career guidance offered by universities to students becomes one of the key factors affecting their personal career development. Previous studies have shown the sufficient career guidance vocational high schools or training centers provide for students have an essential effect on their vocational self-concept (e.g., Wu, 2012). From the perspective of the development course, college students are at the critical stage of career development. Wu, Tsai & Chen (2014) point out that the appropriate career guidance had a strong impact on the vocational self-concept and self-perceived employability among college students in Taiwan. Based on these career transition literatures, the quality of career guidance college students and graduates receive may influence the quality of the transition.

In all, this study aims to understand whether and how college experiences contribute to college graduates' employability, namely the knowledge, skills, and competencies needed for the workplace, particularly from the graduates' perspectives.

As for the definition of employability, in order to adapt the concept to the Taiwanese context, this study will adopt the catalogue of employability proposed by the Chin and Chuang (2010). They incorporate the employability indicators the Department of Youth Development Administration in Taiwan has suggested and commonly used by Taiwanese scholars in the field. They theorize employability as consisting of four fundamental aspects including general ability, professional knowledge and ability, professional attitude, and career planning.
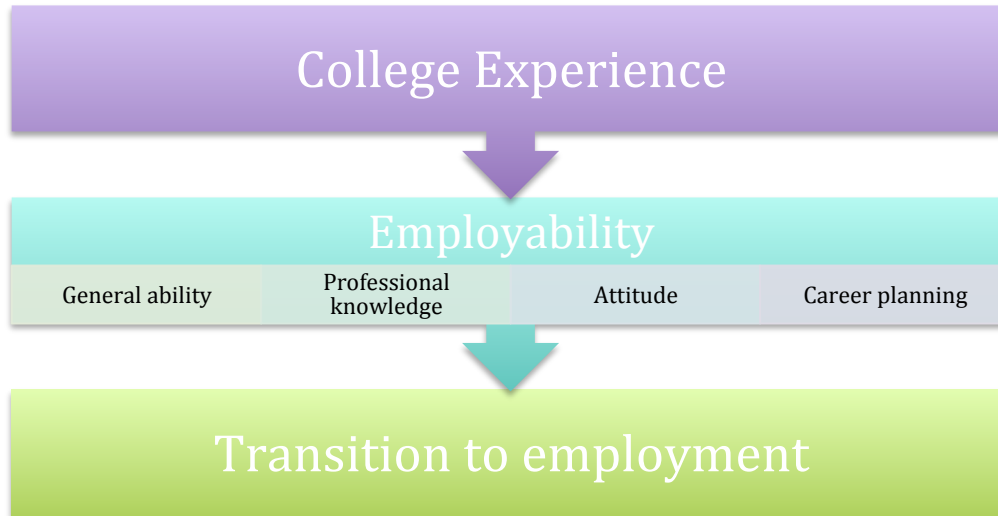
Figure 3.2: Theoretical framework

The second chapter includes a discussion of each aspect of this model (p. 75). These four aspects and the attributes and skills mentioned above were adopted in the interviews with college graduates for examining how college experiences contribute to the employability building process. [DELETE: This study aims to find out whether there is a gap between what college experience offers, and what the workplace requires of employees. I place emphasis on the connectedness and gap between college curriculum, learning activities and the workplace needs, university career service and whether it effectively prepare graduates as ready-to-go employees, and how other extracurricular activities and work-related involvement contribute to the building of employability and the transition to professional life]

[DELETE: Overall, this study approaches college graduates and listens to their voices regarding their higher education experience, resources and assistance they receive and perceive in transition to workplace, and their perceptions of the notions of employability and professional life.]

Qualitative Research and Case Study

This research is a qualitative case study. In theory, qualitative studies include many methodologies: narrative-biographical study, phenomenological study, grounded theory study, ethnography, and case study. This study employs the case study approach, as it fosters a thorough understanding of individuals and their personal experiential accounts. A qualitative case study is a methodological process that enables researchers to collect data and broaden understanding of a phenomenon. Merriam (2009) defined a case study as an "in-depth description and analysis of a bounded system" (p. 40). Stake (1995) defined a case study as a self-contained entity that offers opportunity for understanding a phenomenon. This study contains the primary elements of qualitative research described by several prominent qualitative researchers (Merriam, 2009; Berg, 2009; Creswell, 2007; Marshall & Rossman, 2011).

As Merriam (2009) indicates, qualitative researchers "are interested in understanding how people interpret their experiences, how they construct their worlds, and what meaning they attribute to their experiences" (p. 5). According to Creswell (2009), a researcher who employs qualitative methods makes several philosophical assumptions. The qualitative researcher:

- Sees reality as subjective and multiple;

- Tries to lessen the distance between herself and that being researched;

- Acknowledges that research is value laden and biases are present;

- Uses the personal voice in his writing as well as qualitative terms and limited definitions;

- Uses inductive logic, studies the topic within its context, and uses an emerging design (Creswell, 2009, p. 17).

Bogdan and Biklen (2007) state five defining features of qualitative research: naturalistic, descriptive, concerned with process, inductive, and meaning seeking through the lens of the participants. Qualitative research gives heavy consideration to the context, as well as to the individual's personal interpretation. They also emphasize the significant value of qualitative data being rich in "description of people, places, and conversations, and not easily handled by quantitative procedures" (p. 2). Qualitative research is largely concerned with process; outcomes and products of research are subordinate to understanding the issue of process, such as how meaning is made by individuals as well as why actions are taken. This attribute of qualitative inquiry suits well with the proposed project. In contrast, quantitative methods do not effectively capture the higher education-career transition process for college students and graduates.

In this regard, the personal accounts of graduates' experiences, perspectives, perceptions and decision making processes have crucial roles in composing the comprehensive understanding of the career transition process of college students and graduates from a developmental perspective. Moreover, qualitative research does not search out data or evidence to prove hypotheses; "rather, the abstractions are built as the particulars that have been gathered and grouped together" (Bogdan and Biklen, 2007, p. 6).

In addition, qualitative researchers try to understand meanings from the perspectives and experiences of the participants. Previous studies about graduate employability do not consider much of the graduates' voices. Utilizing a qualitative approach allows their voices to be heard, and allows examination of related policies to be conducted on a more personally relevant level. In the past ten years, Taiwan's economic and social circumstances shifted. The few qualitative studies accessible in my previous literature review (Liu, 2006) pre-date these cultural changes and fail to account for new challenges facing college students and recent graduates. Educators,

scholars, and policy make need updated exploration on the subject in order to catch a glimpse into workplace newcomers' situation and needs.

This research is a multiple case study, also known as multicase, collective case, or comparative case studies as the research method. Multiple case studies allow more variation within the study, thereby increasing the generalizability of the findings (Merriam, 1998; Stake 1988).

Research Method

In order to provide an adequate portrait of college graduate employability, this research reaches out to recent college graduates from various types of universities in Taiwan, including public and private universities as well as research-centered or practice-centered ones. There are three phases in the study, the first of which included interviews with eleven recent college graduates from various professional areas and university majors. Second, after the individual interviews, all participants filled out a reflection form indicating their perception of employability building that occurred during their college experiences. Lastly, the interviewees participated in one of two focus groups each consisting of five or six participants. The multicase design allows the researcher to reach out to graduates from different backgrounds. Yin described analytical generalizability as when "a previously developed theory is used as a template with which to compare the empirical results of the case study" (1994, p. 31). Thus, the case "provide[s] insight into an issue or redraw[s] a generalization" (Stake, 2000, p. 437). This is an important feature for this study as far as these graduates' personal accounts can be generalized for other college students and graduates' situation and needs.

The personal interviews and written reflection focused on how individuals found their college experiences to be helpful toward employability building, especially how skills,

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knowledge and competencies learned through college education apply to their initial work experiences. The participants addressed their perceptions of the gap, if any, between college curriculum and workplace requirements. Interview participants spread throughout different disciplines including: STEM field, social science and humanity, medicine and health, and others. [DELETE: Chuang and Hu (2012) investigated the relevance of graduates' jobs to their school type and disciplines and indicated different levels of relevance between disciplines and school types through a quantitative research approach. This study examines the relevance of the college graduates' experience through a qualitative approach heeding the graduates' own voices.] I also attempted to achieve gender and geographic balances while selecting participants.

After the personal interviews took place, I conducted two focus groups with the participants from the previous interviews. To accommodate participants from different locations, one focus group took place in Taipei (for participants from the north); the other one was through Google Hangout. The dynamic of focus groups helped inspire participants to express their perception of the employability building experiences, the career transition experiences, and the overall perception and evaluation of the effectiveness of higher education in terms of preparing them for the work place.

Both the individual interviews and focus group interviews were semi-structured. Semi-structured interviews, as opposed to highly structured or unstructured interviews, are designed to obtain specific pieces of information from the participants, but are also largely guided by a list of conversation topics rather than rigidly standardized questions (Merriam, 1998). With the participant's agreement, I recorded all interviews with a digital recorder and then transcribed them for further analysis. The focus groups and individual interviews were conducted in Chinese, transcribed in Chinese, and then translated into English for analysis. In addition, I also made

researcher memos for reflection within 24 hours of each interview and focus group session.

Relative documents like institution career service materials, curriculum syllabus, participants'

reflections and other relevant documents are also included for analysis.

Data Collection Sources and Procedures

As for the recruitment of participants for the research, I used a non-probabilistic form of

sampling referred to as criterion-based selection (Merriam, 2009, p.77).   Non-probabilistic

sampling methods are used when "the fieldworker expects mainly to use his data not to answer

questions like 'how much' and 'how often' but to solve qualitative problems, such as discovering

what occurs, the implication of what occurs, and the relationships linking occurrences"

(Honigmann, 1982, p. 84). Criterion-based selection involves the identification of participants

based upon a set of attributes essential to one's study. According to Maxwell (2005), a researcher

would use criterion-based selection when, "achieving representativeness or typicality of the

settings, individuals, or activities selected" (p. 89).   For this study, the main reason for using

criterion-based sampling was to reflect certain characteristics of the graduate population.

For this study, the main reason for using criterion-based sampling was to reflect certain

demographic characteristics of the graduate population. For the purpose of finding the

constructive attributes and competencies that contribute to the career transition phase, I excluded

graduates that are unemployed more than a year within the two years after graduating from

universities. The general criteria that applied for selecting the participants were:

1. Graduated from the undergraduate department of a Taiwanese higher education

     institution within two years. (Due to the 6-12 month compulsory military service required

     for Taiwanese male adult, male participants with such experiences extended to up to three

     years.)

2. Have been working or self-employed for more than a year.

Other than the general criteria, to reach a balance in terms of college types, disciplines, career tracks, gender and geographic distribution, the samples would:

1. Include participants various professional areas;

2. Include a balanced ratio between participants' gender;

3. Include half from the northern part of Taiwan, where more than half the higher education institutions are located; another half from other locations;

4. Include half from public institutions and half from private institutions;

5. Include at least one self-employed participant.

As for the recruitment of participants, I contacted several university career centers and department offices in Taiwanese universities for assistance through emails and personal visits. I also invited individual participants that fit the criteria through personal connections and professional networks. Twenty-three people responded to my recruiting invitation. First, I asked all potential interviewees to fill out an online-survey indicating their personal background including gender, fields, institutions attended, graduating year, and work experiences. It turned out that some of the respondents did not meet the selection criteria, and some graduated from the same universities and programs. To reach the variety of background, I excluded participants that are from similar background and eventually included eleven of them for the next steps in the research process, corresponding to the mixed criteria for the sample pool proposed above. Participants' profiles are included in the end of the chapter.

Additionally, all participants filled out an online employability building reflection survey, which allowed them to reflect on their significant employability experiences in college

years through writing. The content of written reflections were also included as research data for analysis.

Ethics

        I applied and received clearance for this research from the University of Maryland Institutional Review Board. This formal set of permissions gave me the credentials to access the participants. The data I collected are stored on a password-protected computer to which only I have access. In addition, I respected the confidentiality and protected the anonymity of all participants by creating pseudonyms. Before the interview took place, I obtained the informed consent from every research participant for recording of the conversation.

Data Analysis

        In analyzing the data (interview transcripts, observation notes, and documents), I used a thematic or open coding system, in which I inductively drew out themes that correspond to the research questions. Data collection and analysis for this research was an iterative and recursive process, meaning that as I memoed, transcribed interviews and coded data, my understanding of the themes and issues was enhanced and I was able to integrate this new understanding into subsequent collection and analysis of data (Tracy, 2010; Hesse-Biber and Leavy, 2011). The first round of coding was simply an organizational strategy and helped to categorize data into usable themes. The ensuing rounds of coding helped to refine and elaborate upon those themes. At this point, I compared the data within and across cases. The constant comparative method (Corbin & Strauss, 2008) allows the researcher to look for similarities and differences within each case and across cases while continuously moving back and forth to the previously analyzed data. Because this study is a qualitative multiple-case case study, the constant comparative

method "allows the researcher to differentiate one category/theme from another and to identify properties and dimensions specific to that category or theme" (Corbin & Strauss, 2008, p. 73).

Validity

Maxwell (2005) defines validity as "the correctness or credibility of a description, conclusion, interpretation, or other sort of account" (p. 106). Creswell (2007) suggests that any qualitative study employ at least two recognized sources of validity (p.209). In this study I used rich, thick description to bolster credibility, along with triangulation by collecting related documents from the participants for document analysis.

Methodology Summary

To sum up, this research is a multi-case qualitative study, featuring eleven Taiwanese college graduates' perceptions of how college experiences contribute to building their employability. To reflect the demographic characteristics of the Taiwanese college graduates population, I used a non-probabilistic form of sampling applying several criteria for selecting research participants. I conducted personal interviews, focus group dialogues, and written reflections in the data collection. All conversation and written reflections were in [Cantonese?] Chinese. I subsequently transcribed in Cantonese/Chinese and then translated the documents into English for analysis. The constant comparative method (Corbin & Strauss, 2008) allowed the researcher to compare within and across themes that arose from several rounds of coding. After identifying and gathering the code through individuals' personal experiences, I then applied deductive codes based on the research framework specifying the four main aspects of college experiences for further analysis.

The Portraits of Taiwanese College Graduates

In regard of the complexity of studying employability, I present my findings by the graduates' fields of study and professions in the following four chapters. I will present eleven cases by emphasizing themes that show significant impact on their employability building and professional development. Due to the limited time and resources of the study, I cannot cover experiences of graduates from all academic disciplines; yet I have put in efforts to recruit participants from different degree programs attempting to capture the diversity of the college graduate population. These participants represent graduates from different genders (six males, five females), geographic locations (seven from northern Taiwan, four from the other parts of Taiwan), institution types (five from public universities, six from private universities or colleges), and various fields of study. I categorized the eleven participants into four groups in accordance with their academic and professional backgrounds: social science, health and human services, and STEM. Other than the three professional groups, one group [of how many interviewees?] features self-employed graduates' experiences.

The profiles and case studies derive from the interview transcripts, focus group dialogues, and participants' reflections on their perceived employability preparation written after the interview. Through the coding and analysis of the data collected, several themes emerged to highlight some impacts that recent graduate perceived as critical in shaping their employability building and career development trajectories. While not every theme was relevant for every participant, these themes were useful in providing an organizational structure to the student profiles. It should be noted that a different researcher might have distilled different themes from these data and that my subjective interpretation is just one way of making sense of it.

Chapter Four to Chapter Seven present graduates' experiences from various fields. Each chapter contains two to three cases. After a brief introduction of the participant's current position and career trajectories, analysis of how college experiences relate to participants' employability follows, along with their expectation of higher education and perceived gap and challenges between higher education and job market needs. Each of these four chapters end with cross-case analysis, presenting themes that are most relevant to employability building in each field.

Chapter Eight then presents an overarching cross-field discussion of the themes, exploring the themes correspond to the four umbrella categories under "college experiences" spotlighted in the theoretical framework: college curriculum, extracurricular activities involvement, work-related experiences, and career services. Overall discussions regarding redefining employability in the Taiwanese culture relevant context, feasible ways for building stronger relevant skills for graduates, re-envisioning of the purpose, and the proposal of a new pedagogy fitting the new higher education vision are also included in the chapter.

Before jumping into themes and life stories of the research participants, there is one thing that needs to clarify: there is no such a thing as "the typical Taiwanese college graduates career trajectory" or "employability building formula." Every graduate's experience is unique. However, through the presentation of these higher education-career transition scenes, I hope to highlight critical turning points that nurture college graduates' employability building experiences. Their narratives reflect Taiwanese graduates' needs in a culturally sensitive manner. It is my hope that the study reveals a much clearer picture of college students' needs that closely correspond to the economic and political challenges. I hope that Taiwanese higher education institutions will find new approaches to tailor education experience to meet students' needs.

Research Participants Profiles

The eleven research participants included in the study were from various fields, education backgrounds, and geographical locations. Before presenting their individual life stories, I will briefly introduce their general background through their individual profile in order to present an overall portrait of the participants.

Case 1: Helen Lee (Social science field)

Helen graduated from the law department at a public university in southern Taiwan. She grew up in Kaohsiung, the biggest city in southern Taiwan, and was inspired to study law due to her previous engagement of volunteering for a local welfare organization aiming to help women and children suffering from domestic violence. She accepted the Taiwan International Ports Corporation (TIPC) fellowship in her junior year. The fellowship includes tuition remission, leadership training, and potential job-matching opportunity within the company. After Helen graduated from the university, the company offered her an official position. Currently, Helen works as a project manager and legal consultant in TIPC. Her main job duties include personnel management and evaluation, and legal support of the corporation affairs.

Case 2: Ethan Ho (Social science field)

Ethan graduated from the radiobroadcasting program from a private university renowned for its communication and broadcasting expertise. However, Ethan did not choose to take the communication career path; instead he is now working in the youth developmental field. In his college years, Ethan had tied his connection through volunteer and internship with the F. Foundation in Taipei. The connection developed smoothly and the foundation recruited him as an official staff member after graduating and having served one year of compulsory military

service. Ethan's position requires him to oversee the planning, implementation, and evaluation of the educational outreach program in the F. Foundation.

Case 3: Alan Zheng (Social science field)

Growing up in a business family, Alan never intended to step into the helping profession or welfare area. However, the current Taiwanese college entrance examination system took him on an unexpected journey; he graduated with a bachelor of social work degree from the top university in Taiwan in 2014. At the time Alan was a college student, the Taiwanese society experienced the tremendous power of social movement, especially through student-activated protests. Alan witnessed the power of these movements through actively engaging in some protests, and the intensive summer internship with Taiwan Labor Front (TLF). After one year of compulsory military service and a few part-time jobs that he knew he had no passion for, Alan decided to go back to the area that interested him most: politics. He got his current position as a congressman's assistant through his previous network with TLF. Alan's main duties include collecting information and data for discussion agenda, debriefing and preparing the congressman's interpellation remarks, etc.

Case 4: Charlie Chen (The STEM field)

Charlie earned his Bachelor of Science degree on mechanical engineering from a private university in 2014. Known for its close connection with the industry and intensive internship requirement, the university Charlie graduated from aims to provide for the needed workforce in the Taiwanese automobile industry. However, Charlie's current work does not directly relate to the knowledge and skills obtained from his college coursework; he is working for a startup electronic commerce (E-commerce) company as the chief marketing officer. Through the reference of his program advisor, Charlie worked part-time for the company when he was still in

college. After graduation and one-year of military service, the company offered him his current position. Charlie's main duties in the company include analyzing the sales and market trend, providing customer service, expanding new market opportunities, and other daily office operations. For him, connection between knowledge and skills learned in college is relatively weak, and he finds "other engagement in college years" more influential than classroom experiences regarding employability building.

Case 5: Tobey Yang (The STEM field)

Tobey graduated from the computer sciences and information-engineering program from the most sought-after university and program in the country. As a young woman, Tobey is one of only ten female students in the male-dominated eighty-person cohort. Tobey grew up in southern Taiwan and left home early to attend the best girls' high school in Taipei at the age of fifteen. Since that time, she made her own decisions, including her career choice. The computer-programming program she happened to come across in high school rooted her interest in the field, and gradually steered her path toward the information study field. Although she holds a prestigious degree from the top university, Tobey struggled upon graduation, mainly due to the gap she perceived between the curriculum and workplace needs, and the lack of career support she received from the university. Currently, Tobey works as an operation consultant for an international software company in Taipei; this is also her first job after leaving campus. Her main duties include customizing software development and optimization and constant collaboration with other companies. A few months after the interview, Tobey left her job and started pursuing her master degree on information study at UC Berkeley.

Case 6: Gordon Wu (The STEM field)

Gordon graduated from a public university in northern Taiwan. The university was once Taiwan's most important maritime technology higher education institution; as the economic model shifted in the past two decades, the university was also forced to transform itself into a general university, leaving its maritime specialty behind. Gordon's program, the mechanical engineering department, was established at the time of the transformation. Gordon considers himself as "very lucky" to have met a mentor, Professor Chen, in the program. From junior year, he joined Professor Chen's lab and started the in-depth interaction with him. It was also through Professor Chen's network that connected him with the research assistant position in a federal government research institution and his current position as an assistant research-development engineer in the same organization. Gordon's main duties include project development, support to the researchers, and other operational needs in the lab.

Case 7: Chuck Tsai (The health and human service field)

Chuck graduated from a medical university in Taichung, with a bachelor degree in medical laboratory science and biotechnology. A career path leading to the medical technology profession in fact was not his original plan. Due to the lack of sufficient knowledge and understanding of college majors, Chuck did not fully understand all the programs to which he applied. As a result, the first year was a great surprise for him in regard of the curriculum and options of career pathways. After internship and certificate examination, he graduated from the university and started his first job as a medical technologist in a regional hospital. A few months ago before the interview, he moved on to his current position as a medical technologist in a private clinical laboratory in Chia-Yi City, his hometown. His main duties include performing and analyzing the results of scientific and medical tests on blood and bodily fluids.

Case 8: Yvonne Hsieh (Health and Human Service Professional Field)

Yvonne graduated from one of the most prestigious [public or private] universities in Taiwan. As she was planning on choosing social work as her major, her families tried to talk her out of the "difficult option" because of the hardship in the profession and low wage. Both of her parents are federal employees, and what they wanted for their daughter was a secure position with good pay like theirs. However, Yvonne was determined to step into the social work professional field. She worked hard in school, and passed the state social work license right after she graduated from the university. Yvonne is a licensed medical social worker in a regional hospital in Taipei City. As a medical social worker in the psychiatry department, she performs individual and group therapy with medical doctors. Additionally, she serves as a case manager, patients' counselor, welfare advocate, and provides patients and families with the non-medical support needed to deal with patients' conditions. Compared to other positions in the social work field, medical social workers work shorter hours and are paid better. However, she plans to change her career track to a federal government position, ironically, as her parents expected, because of the "hard reality" facing the social work profession.

Case 9: Sue Kang (Health and Human Service Professional Field)

Sue always knew that she was going to work in the medical field since she was a little girl. Instead of becoming a doctor as she previously planned, Sue currently works as a registered nurse in a local hospital. Interestingly, she always attended schools close to her home; as a result, she is still living with her parents. She was originally enrolled in the gerontology major, later deciding to apply for a double major with the nursing degree in consideration of the job market. After she graduated from the university and obtained the nursing license, she started her current

job. However, the transition was not easy for her. After transferring between a few departments, she finally settled down but still did not consider herself fully prepared for the workplace.

Case 10: Jean Tsai (Self-employed)

Jean grew up in southern Taiwan where her family owns a local business. Unlike many other participants in the study, Jean attended vocational high school, and then chose to continue her higher education in an academic-track college. With the early education bachelor's degree, Jean is currently the CEO of her company in children's music and performance field. With what started as the senior year project, Jean and her classmates produced a children's music album and presented it as the final project, but it did not end there. Jean brought the project to competitions on campus, nationally, and out of the country. By expanding her social and professional network, she started the idea of being an entrepreneur and secured funding to support her business. At the time the interview took place, in addition to the children's music company, Jean was also completing her master of art degree in broadcasting and has a few lecturer appointments in local colleges.

Case 11: Andrew Lin (Self-employed)

Andrew attended one of the top normal universities in Taipei and majored in math education. As a gifted STEM field student since high school, he met great mentors that allowed him to undertake mathematics research projects at a young age. The pleasant experiences developed into his passion in math education. Through his volunteer and internship involvement, Andrew found that many students lack motivation for learning. Thus, Andrew wanted to fill the gap between students' classroom learning and their everyday life experiences. He and his

colleagues started an educational organization two years ago. Andrew serves as the CEO of the

studio and oversees the operation of the company.

The following two tables summarize participants' academic background and their current

work information.

	Name	Field	Gender	Graduate Year	University type	Program/ major	University location
1	Helen Lee	Social Science	Female	2015	Public	Law	Southern Taiwan
2	Ethan Ho	Social Science	Male	2015	Private	Broadcasting	Northern Taiwan
3	Alan Zheng	Social Science	Male	2014	Public	Social Work	Northern Taiwan
4	Charlie Chen	STEM	Male	2014	Private	Auto mechanical engineering	Northern Taiwan
5	Tobey Yang	STEM	Female	2016	Public	Information study	Northern Taiwan
6	Gordon Wu	STEM	Male	2015	Public	Mechanical engineering	Northern Taiwan
7	Chuck Tsai	Health and human service	Male	2015	Private	Medical technology	Central Taiwan
8	Yvonne Hsieh	Health and human service	Female	2015	Public	Social work	Northern Taiwan
9	Sue Kang	Health and human service	Female	2015	Private	Nursing and gerontology	Northern Taiwan
10	Jean Tsai	Self-employed	Female	2014	Private	Early education	Central Taiwan
11	Andrew Lin	Self-employed	Male	2015	Public	Mathematics	Northern Taiwan

Table 3.1 : Research Participants' Academic and Professional Background

	Name	Current job	Company	Location	Position duration	Monthly wage (NT$)
1	Helen Lee	Project manager	Taiwan International Ports Corporation	Kaohsiung City	2+	35,000
2	Ethan Ho	Project manager	A private education foundation	Taipei City	1+	34,000
3	Alan Zheng	Congressman's assistant	Congressman Wang's office	Taipei City	1+	36,000
4	Charlie Chen	Chief marketing officer	A startup e-commerce company	New Taipei City	1+	30,000
5	Tobey Yang	Operation consultant	An international software company	Taipei City	2	72,000
6	Gordon Wu	Assistant research-development engineer	A federal research laboratory	Keelung City	2	47,000
7	Chuck Tsai	Medical technologist	A private clinical laboratory	Chia-Yi City	1+	32,000
8	Yvonne Hsieh	Medical social-worker	Social worker office in a private regional hospital	New Taipei City	2	43,000
9	Sue Kang	Registered nurse	A regional hospital	Taipei City	1+	42,000
10	Jean Tsai	CEO	Children's music studio	Chia-Yi City	2+	Not provided
11	Andrew Lin	CEO	Math Laboratory	Taipei City	2+	Not provided

Table 3.2: Participants' Current Job Information

Chapter Four:
The Social Science Field Graduates' Experience

Introduction

The first area portrayed here is the social science field that has vague borderlines. According to the Online Merriam-Webster Dictionary, social science is defined as, "a branch of science that deals with the institutions and functioning of human society and with the interpersonal relationships of individuals as members of society." Typically, social science covers a broad range of disciplines that include, but not limited to, human geography, environmental planning, economics, education, social statistics, demography, education, anthropology, linguistics, law, history, politics, psychology, sociology, science and technology study, social policy and social work, etc. (Economic and Social Research Council, 2018). However, in Taiwan, the social science field extensively refers to areas that are not covered by STEM and other natural science featured areas. Taiwanese students choose their academic tracks in the sophomore year of their high school, options including Group I, which consists of social science and liberal art students, Group II and Group III of science-based students (the latter studies biology as an additional subject). The curriculum for each track is adjusted based on this classification; additionally, later they will decide college majors mainly aligned to the track groups they originally belong in.

In this chapter, three recent graduates from the social science field are invited to share their career developing experiences and perceptions regarding employability building in college. Through these experience accounts, the researcher tries to capture how college experiences impact employability building of recent graduates of the field, also to examine the gap, if any, between workplace expectation and college experiences.

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CASE ONE: HELEN LEE

Helen arrived at the meeting location earlier than I did even though I was already there before the appointed time. We had never met each other before; however, when she saw me come into the coffee shop, she stood up from her spot and greeted me with a gentle smile. Her long hair was in a ponytail down her back. She was expressive, yet not wordy. Talking to Helen was easy; she knew exactly the way to keep conversation flowing.

Helen works as project manager and legal consultant in Taiwan International Ports Corporation (TIPC), a former state-owned agency that was transferred to a commercial operation a few years ago. She joined the company right after she graduated from the law school of a renowned public university in southern Taiwan in June 2015.

Career Trajectory

Helen grew up in Kaohsiung City, the largest metropolitan city in southern Taiwan. Growing up in a family with both parents as government employees, she said she was brought up to be a disciplined student. In high school, she had an opportunity and volunteered for The Garden of Hope Foundation as a committee member for a fundraising weekend event. The Foundation mainly serves women and family that suffer from domestic violence and sexual trade. This volunteer experience became a turning point for her future career choice.

From then on, news reports about under-represented groups like single moms or women who suffered from domestic violence started to catch my attention. I began thinking about the possibility of solving this huge problem. Well, the sense of justice may be nonsense for some people; yet that was what inspired me to study law.

As many Taiwanese high school students, Helen did not have many opportunities to explore what real world of work was like, or to understand social issues through first-hand experiences. The engagement with the Foundation's advocacy for underrepresented women inspired her to pay more attention to the underprivileged minorities' needs, and to challenge the status quo, by studying law. *"I think the encounter with the group of suffering women inspired me to step in the field with some level of idealism,"* she said.

Thus, Helen put law school as her first priority when applying for college. As she wished, she was admitted to a law school in southern Taiwan. At the time she graduated from the university, Helen was offered her current job, *"I am lucky,"* she said, *"I got fellowship funding from the company I am currently working for from my junior year. I was browsing through Facebook posts and randomly saw a friend's post about Taiwan International Port Corporation (TIPC) recruiting scholarship fellows...."* This merit-based scholarship is offered to sophomores with qualifying academic performance (GPA 3.0 or top 30% in class). After a written exam, an interview, and a two-month summer paid internship, nominated fellow students will receive NT$80,000 (US$2,666) stipend for their senior year (Annual tuition for a Taiwanese university is between US$ 2000-4000). TIPC requires the fellows to work in the company for at least two years, if they pass the official staff exam and interview. At the time the interview took place, Helen just celebrated her first-year anniversary in the appointed position.

College Experiences that Enhance Employability
Curriculum That Build Professional Knowledge and Skills

In Helen's reflection, she wrote, *"I think every course I took in college turned out to be useful. Mandatory core courses build up the foundational knowledge, all other courses I chose*

fitted my interests and needs." Helen thinks the immediate connection is the application of the knowledge over law. "*My first position is to oversee personnel attendance management and evaluation, since I have the background of Labor Law, I grasp on to the complex policies and regulations in a short time. In fact, my other colleagues who have already worked in the department for years do not understand as much as I did*", Helen said.

To her, the connection between college curriculum and workplace does not merely build on the knowledge. "*I really appreciate how the program prepared me with the ability of connecting the law to the timely social situations. I was surprised to find how sociological and legitimate analysis, and the principle of law could be usefully applied to real life situations,*" she reflected. She acknowledges that various disciplines and programs equipped her with various strengths and abilities needed for a different profession. In her own experience, the study of law strengthened her sharp conceptualizing and evaluating skills that allow her to reason and reflect in a disciplined and reasonable logic.

However, the happy thought did not happen on the first day of her higher education journey. She said, "*The first two years of law schools was kind of boring and dull, most of the time I was asked to familiarize with different laws, and exercise the habit of critical thinking in debating lawsuit cases.*" Helen describes her regular freshman and sophomore year as "*life full of discussions and debates over basic law principles and endless group presentations.*"

The hard work on building a solid knowledge foundation paid off afterward. Helen mentioned that the turning point was in her junior year. The familiarization of the laws from accumulated knowledge, plus the regular practices of critical thinking skills allowed her to see the wide application of law in various field.

She also indicated how the passion and energy of the devoted faculty members inspired her motivation to learn. She said, *"Different professors organize and deliver their classes in different ways; I am reluctant to say, but some were very boring. However, there are still professors that really know how to inspire us. I remember some of the teachers worked really hard to engage us in the classroom discussion, and met with student groups regularly to help us complete our projects. I think these professors had great impacts on my learning."* Helen mentioned that project-based learning opportunities, and frequent opportunities to discuss with instructors and other students were significant elements in building her critical thinking ability and other intelligent abilities needed in the field.

Other than teaching approaches and pedagogies, Helen also mentioned the impact of modeling. She wrote, *"I feel like university professors are not only to teach knowledge or theories. I enjoyed hearing them talk about their ideas and opinions over different subject, and even criticizing the phenomena and some policy decisions. To me, they are setting up examples of what independent thinkers are to be like.*" To Helen, the ability to think clearly is the key that differentiate college graduates and others, and the key that make her shine on her current position.

Fellowship Opportunity

Compared to other graduates, Helen's career transition is relatively smooth because of the TIPC fellowship she accepted. Before she worked as an official employee for the company, she interned with two different departments, and went on several fellow field trips that helped her to understand more about the organization's culture and operation. When she started her new position, she was assigned to the department she once interned with.

Apparently, this opportunity builds a strong network that prepares further career development opportunity. For social science college graduates, the starting monthly wage

averagely falls between NT$ 21,000-27,000 (US$700-$900), depending on the hiring company and employee's experiences. Helen's starting salary was NT$30,480 (US$1,016) with a four-month bonus at the end of the year and a great benefit package. She said,

> *Plus the tuition remission and training opportunities I received from them, this program is amazing! For me, there is no gap between campus and workplace. This program got me a job offer right after I graduated, I am able to apply knowledge I learned from college to my current job, with satisfying salary and benefit package. I think higher education prepares me well for the future.*

Part-time Work Experiences

With the fellowship, Helen did not need to worry about her financial situation. Still, she took two part-time jobs. She was a teaching assistant to a professor in the department, and an assistant web developer for a campus department office. *"I did not really need the money, and the work hours were not terribly long. I think the reason I applied for these jobs was to immerse myself to the real world, with real responsibility",* she said. These two jobs both allowed her to work from home. She reflected that she eventually realized the work ethics and attitude heavily decide the quality of work being prepared and presented. Part-time job experiences also pushed her to manage her time better because of the tight schedules and hard deadlines of various requirements.

Needed Employable Skills in the Workplace

When asked about her perceived employability that had been built in university, Helen laid out four areas: critical thinking skills, organization and presentation skills, professionalism, and people skills.

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Critical Thinking Skills

During the interview, the term 'critical thinking skills' was brought up over ten times. Every time Helen mentioned it, she expressed her point with emphasis:

> *I think four years of law school has huge impacts on my way of thinking, I mean by helping me maintain an open-minded perspective and develop critical thinking skills. … Let's put it in this way. When I was eighteen years old, I might be good at arguing with other people and I always win. But now, instead of getting emotional or insist on my point when people hold opposite opinion with me… it becomes a habit for me to examine both sides' point of view, try fitting in others' shoes, before making any judgment.*

Helen gave examples of offering an alternative point of view on a controversial issue, explaining how judicial judgments could be misunderstood and misinterpreted by public. She mentioned how the exercises of debating in judicial arguments establish her "habit of mind" and impact her point of view.

> *I had lot of required writing and presentation projects. I mean A LOT. And many of them are related to current situations and controversial incidents that were taking place in Taiwan. Understanding these social and political contexts is critical in understanding the use of these laws in a more sensible manner. For us to discuss the legitimacy of the law and its enforcement, I always find it very hard. Thankfully we have great teachers that are willing to help us with building our own perspectives. Now I find these training very useful.*

While we continued to talk, I soon discovered that her logic was clear, and she is cautious and precise about the use of vocabularies in our conversation. Unlike most young people her age, she talked with very few redundant phrases. Even when she was only expressing her personal

experiences and opinions, I felt persuaded. The capability to hear clearly, think clearly, and express clearly seems simple, but actually requires a set of abilities that take time and repetitive practice to cultivate. For Helen, the heavy loading of law school requirements built a firm foundation on that.

Progressive Attitude Toward Career Planning

Regarding the "great opportunity" that she had captured, she reflected in her writing as "*One of the most significant steps in my college years.*" After she started the program, she realized that, for her, it was a once in a lifetime opportunity, so she passed the funding opportunity information to some of her friends. To her surprise, not everyone was interested as she was. *"When I cheerfully told him about this, and knowing that he had a good chance getting in the program, he just did not want to do it. "* Many college students consider junior year as their busiest year of all. For some students, leadership roles in student organizations usually get heavier. For others, part-time jobs could be time consuming as well.

> *I respect his decision when he told me he was too busy with his student organization duties that he did not have time to prepare for the application. Well, I mean you do need to make time to prepare the materials and figure out details and deadlines and things like that ...I realized that there are opportunities out there, and you can only capture it when you have set it as the first priority. Easily, opportunities like this can be overlooked."*

Her point reminded me of conversations I had with other recent graduates. More than once, I heard stories of how college graduates regret the time and opportunities they have wasted in university. The "All-you-can-play" type of mindset impacts Taiwanese college students' choice of lifestyle heavily. For many Taiwanese college freshmen, after bearing enormous pressure from intensive high school lives, the ultimate goal for college is to have fun, and for

many, in an unbalanced manner. As a result, some do not care much about their academic performance or career preparation.

> *Well, to be honest, a lot of the students just want to enjoy themselves in their college years, and that's it. Not many put planning for future career as an urgent or necessary agenda. Many of my friends did not really start thinking about their career until the senior year. I guess it is about how one decides to use the freedom and independence that's bestowed to a college student … As for me, I might have lost this precious opportunity if I did not think of my future career plan ahead like I did.*

In Helen's case, the decision of capturing the opportunity that ended up impacting her future career not only depends on her luck, it also depends on clear expectations over higher education and the sense of career planning in a time-sensible manner.

Organization and Presentation Skills

Helen identified some other attributes that help her succeed in her current position. As an entry-level office clerk, a main part of her assigned duties stem from event planning, document editing, and day-to-day office operation. Similar to others, Helen sometimes feels her workload is overwhelming. "*Very often I would be asked to present two proposals for my supervisors to choose from, but with only limited time to prepare as well as to present it. The pressure is tremendous but still bearable…it is absolutely important that I budget my time, and get the report and assignment done in time,*" she said. Working in a fast-paced office environment, Helen realized that it is not enough to only be capable of presenting the proposal to her supervisors; she needs to understand her supervisor's expectations. She shared: *"I know he wouldn't have much time for me, so the most critical ability to get the job done well would be the*

ability to propose my suggestion in a concise and structured manner." Helen considered how her

law study training in college contributes to her current organization skills:

> *I think the ability was built when I was in college. I remembered that in many different*
>
> *classes, we were often asked to write book reports, arguments, or give presentations on*
>
> *different topics… I was often asked to condense the use of words. Some of the professors*
>
> *even made extra efforts to teach us tips for preparing a successful presentation. … Now the*
>
> *ability to think thoroughly, and to present in a reasonable manner is now transferred over to*
>
> *my current job.*

Helen gave another example of an incident that happened a few days before we talked.

Her colleague was having trouble finding a webpage that contains some necessary information

after entering twenty keywords. When her colleague asked for her help, she used only three

keywords for searching and immediately found the exact webpage that her colleague could not

locate. Helen considered the confidence and recognition from supervisors and colleagues are

proof of her positive employability in her current position.

Teamwork and People Skills

Another related employability attribute she mentioned was teamwork ability. *"I think*

college experience makes a huge difference on my teamwork skills. To me, one of the major

difference between university and high school lives is teamwork, the necessarily of working and

interacting with people from various background." Helen stated how she appreciates that the

general education course requirement pushed her to step out of her comfort zone and allowed her

to work with teammates from various disciplines and backgrounds, and "*to connect with the*

world, especially the part of the world that I did not grow up in." After two years of

employment, Helen realized the critical importance of teamwork. "I *believe the ability to survive*

the teamwork model is crucial ...no matter what professional field you choose to go in and what job you do."

As Helen said, people skill is gaining employers' attention globally. Employees with teamwork experiences and ability are more likely to be competent in present business modules. Helen's experience points out the importance of repetitive occurrences of teamwork projects in higher education phase. She said, " *I think this is a very influential part of my college life, teamwork... including gaining sharp sensitivity of who to choose as your teammate...it takes time to grow such ability.*" For Taiwanese students, group projects are often not required in high school (or earlier) education. As Helen said, it takes time to cultivate teamwork skills. Hence, to improve graduates' employability, higher education institutions should rethink the curriculum design approaches that help students elevate their people skills.

Overall Reflection of Higher Education Experience

When asked about if there is a gap between college education and her professional life, Helen said, "*I do not think there is a gap for me. The challenges that I am facing in my job are due to the work environment and culture in the company, I do not think higher education needs to be responsible for it.*" In fact, she thinks higher education experiences contributed well for her career. They strongly built the employability she currently uses for her position. However, she did not think all her classmates are well prepared like she was. She said, her smooth transition from studenthood to professional life does not apply to most of her cohort classmates. "*I graduated two years ago, and still many of my classmates are trying to figure out what their next steps would be. I feel like that I started planning for my career in my junior year, that is the year that I accepted the fellowship. It kind of boosts my learning motivation, and helped me focus on*

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sharpen my skills and knowledge over my future profession. I think it is also a great practice before my professional life really starts."

For Helen, she considers the most important value higher education brings to her life is the ability for independent thinking and decision-making. In fact, she thinks the freedom and time college students have as the most precious assets, because it allows young people to learn new concepts, digest, and tryout for very low cost. "*I think the time for thinking and contemplating is important. There is no other time in life that one person would be allowed to use his or her time so freely, and given resources at such low cost.*"

Helen's reflections over Taiwanese higher education is encouraging, to educators and researchers as well. In later analysis, I will compare Helen's college experiences with other social science graduates' experiences to point out a path that takes higher education to fulfill its purpose of preparing the "prepared-mind."

CASE TWO: ETHAN HO

An old friend of mine, who is currently the head of The F Foundation, an active youth development agency in Taipei, connected me with Ethan. Ethan started as a student participant in one of the foundation's summer camps in 2012. After that, he had been constantly involved in other training sessions offered by the foundation and was recruited as a volunteer leader and intern in summer and winter camps in later college years. We met at the foundation's headquarter in central Taipei City. With sufficient funding from a well-developed commercial bank, the foundation's office had great skyline views, spacious work and meeting spaces.

Ethan studied radio broadcasting in a private university in Taipei. This university is renowned for its communication and broadcasting programs and its close connection with the media industry. In fact, the radio-broadcasting program Ethan attended was one of the only two undergraduate level university programs with the concentration in Taiwan. He has been engaged with the foundation for six years since the summer he graduated from high school. After university commencement, he went to serve in the army for one year, and started his current position as a project manager in the foundation after he graduated from university in summer, 2015. His main duties include oversight of the planning, implementation, and evaluation of the educational outreach programs in The Foundation.

Employability Needed in the Workplace

Ethan had been engaged with the foundation for over five years before he officially started his professional career here. With five years of previous involvement with foundation, Ethan had in-depth interaction with the staff and was familiar with the foundation's operation. Yet, when we talked about the transition to his current position, he said, "*Even with the background, being*

a staff member of the team is still a challenge to me" The differences come in several aspects: the amount of clerical and administrative ability, communication skills, and independence.

Administrative Ability

First, Ethan pointed to the huge amount of administrative works that is entitled to his position. *"I was very surprised to realize that I spent most of my hours attending meetings, writing and sending out minutes, making and returning telephone calls, writing emails, and manage the budget and financial account. To be honest, this is far different from my expectation and imagination of the 'project coordinator' position that I am entitled,"* Ethan said. These *"tedious discussions in the meeting with a lot of problem solving before the program takes place"* did not occur in his volunteer years with the agency.

Prioritization and Independence

Besides, Ethan also mentioned that *"the ability to prioritize in multitasking situation"* heavily depend how successful recent graduates perform in the agency. Throughout the conversation, he repeatedly identified setting priorities as one of the key skills to succeed in workplace. He said,

> *The distinct difference between volunteer or part-time worker and an official staff is the role expectation- both from my supervisor and myself. I have learned not to ask for help from my advisors for everything. The better way to do it is to come up with my solutions, and discuss the choice of options with her. For me, it's a try-and-error process to independence."*

Ethan pointed out the significant mindset change that usually demonstrates as maturity and prepared employability: from dependence to independence, and the ability to derive

decision-making and find feasible solutions after going through a critical thinking and problem-solving process.

The transition deepened Ethan's sense of responsibility and spontaneity that did not occur in his student years. Besides, he also expects himself "to extend the scope of his radar" that he would be able to respond to more incidents and students' needs in a profound and timely manner. He said, *"I was a very experienced camp counselor for years. And now I am wearing the event coordinator's hat that makes me realize that the responsibility given to me has more than doubled. I am obligated to go one step further to consider the students' potential risks and unspoken needs, and pre-arrange the solutions when problems arise."*

Communication Skills

When asked about the most critical qualifications needed to succeed in his position, without hesitation, he answered, *"Communication skills, definitely."* When he discovered the intensity and frequency of communication needed to get his job done, he realized that in the real world of work, relationships are critical in project success. *"…Like you need to learn to communicate well with partners so they know exactly what your expectation and limitations are, also learn to understand where they are standing? Now I know a huge part of the success depend on getting well with people around you, and to help everybody in the team find the space and motivation to work together happily and smoothly."* He gave credit to his internship experiences for gaining the basic communication skills, for being able to learn from colleagues, and start the learning process.

<center>**College Experiences that Enhances Ethan's Employability**</center>

Ethan spent a lot of time participating the foundation's classes and projects in his college years. The frequent contact with the foundation made him very familiar with the staff, as well as the projects, in the foundation.

Intense Involvement with the foundation Through Volunteer and Part-time Job

We started our conversation by talking about his engagement with the foundation. During college years, Ethan spent three summer breaks and two winter breaks taking part in the foundation's courses and projects. He concluded his involvement with the foundation and said: *"Before I official started my job here, I pretty much know like most of the programs and projects the foundation runs through the years."* According to his supervisor, Ethan was one of the most devoted student volunteers among his peers. His diligent involvement with the foundation helped him advance; while his classmates were looking for interview opportunities in the senior year, he got a job offer before he left campus.

Internships

Other than the in-depth involvement with the foundation, he also spent a summer interning at a radio station. Although an internship was not mandatory in his program plan, Ethan thought of strengthening his professional knowledge and skills in the radio broadcasting industry. He applied for the internship opportunity. In his program, the success of internship application heavily depends on applicants' overall GPA. Ethan did not have perfect academic performance in his freshman and sophomore years. As a result, he did not get internship offers from well-known big radio stations as he wished. Instead, he ended up going to a small local radio station with only a few staff and *"spent an absurd summer there,"* according to him. He said,

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Well, although it was a legal radio station, the approach they used to generate extra revenue kind of falls in the grey area… I was assigned to estimate the advertisement minutes so it does not exceed the upper limit legislated by NCC (National Communications Commission) regulations. … Although I did not continue to work in the field, I would think experiences like this internship opens up my eyes and make the world of work more realistic to me.

In the transition from campus to office, many young graduates would be bothered, or shocked, by the reality in the world of work. The discomfort could shatter graduates' passion over their developing career. The transition from novice to veteran in a profession requires a lot of experiences, positive and negative ones. Ethan's internship experience prepared him for the real-time struggle and counter measures in the real world.

Luckily, in Ethan's second internship with a news feeding website, he encountered a completely different work environment. This two-month internship helped him build the basic sense of professionalism. He clarified by giving an example:

I remembered that I went in a meeting wearing a T-shirt with the "No Nuke!" (核電滾開

) print. I got that T-shirt from a protesting parade and wore it all the time. One of the senior colleague gently reminded me that, although it is okay and reasonable to express your own political opinions, a professional journalist should always be very cautious about respecting the interviewees with different standpoint, and avoid any possible factors that would hinder interviewees from expressing his viewpoints. You don't want them to stop talking to you before the conversation even take place.

There is unique culture in every profession. The subtle, nuanced details like dress codes, taboo subjects in conversations, knowledge of the field's politics dynamics, and swiftly changing

trends greatly impact the level of qualified performance of an adequate professional. As he said, *"I think the keen senses can only be built through field experiences. It is really hard to convey the knowledge or sensitivity through curriculum or lectures in the classroom."*

He then mentioned another incident in his internship experience. Once he was assigned to interview a biomedical expert. The interview transcript was filled with professional biomedical terms that he could not even pronounce. He first thought, *"Gosh, I couldn't possibly write anything about this field."* However, his supervisor encouraged him to *"still write something"* even though the project was obviously out of his comfort area. Finally, he tried, and with the help from other colleagues, they published the piece and got positive feedback. He reflected: *"I would think that remind of me of journalist professionalism as well. Whether I had background knowledge about the things that I am writing or not, I learned that I should surpass the disciplinary barriers and do my best to produce the piece of report as expected."*

Curriculum

Ethan named a few courses that he found especially beneficial for his professional career development. Interestingly, most of them do not belong to the core courses list of his major. The field Ethan currently works with combines education and broadcasting. He did not get much opportunities to put the professional knowledge learned in his radio-broadcasting major to use; however, general broadcasting theory, journalism, and other related projects enhanced his overall abilities needed in his job. One of the courses he took with journalism department connected the theory, skills, and his previous life experiences. Other than going through the basic theories and knowledge in the field, students needed to complete several projects in the semester, and meet with instructors and other professionals in the areas for advice. Through the implementation and presentation of the projects, Ethan solidly grasped the knowledge and skills in the field. He

thinks that courses like this one are "ideal for higher education pedagogy" because it pushes students to actively learn and think.

An Add-on: the Military Experience

Ethan heavily valued the mandatory one-year military service. In Taiwan, men who were born in Taiwan or holding a Taiwan passport are subject to compulsory military service. The conscription age is between 18-36, beginning when the man finishes schooling. Recently, Taiwanese government cut the compulsory military service to four-months basic training. However, Ethan was one of the last cohorts who were still required for one full year of service. *"I value my military experience not because of I had fun memories. In fact, most of the days I had during the service were under tremendous pressure. ... That special year effectively built my strength and resiliency in a hard way. The whole military stuff is kind of a boot camp for the real world of work."*

Taiwanese military, like many other countries, operates in a very hierarchical culture. When a supervisor gives an order, there is no room for the answer NO. He was serving at the military base on a remote island, where he had a hysterical and unreasonable supervisor, who constantly asked Ethan and his colleagues to accomplish "mission impossible." *"Their unreasonable requests were pushing me to the edge. I would frequently asked myself that how I should fulfill my supervisor's request, where I should ask for helps and resources, and who I should work with."* That year taught him the importance of networking and opened his eyes to learn stress coping skills from his military fellow soldiers.

Military is a community with distinctly different culture from university campuses. Most Taiwanese college students share very similar trajectories: their most important task for their first twenty years of life is to perform well in school. And that's all. In the compulsory military

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service, young men from various backgrounds live and train together. Ethan got the opportunity to be friends with people that did not finish high school, started working from young age, etc. "*Some of the friends I made in the military were from very different background from me. A lot of them had been working for years. For them, the pressures were like nothing. They taught me how to build up my own network in other offices, and make the relationships work for you in need. These tips saved me!*" This experience inspired him to think outside of the box and learn to cope with stress. The mindset and attitude change helped him get through the tough time, and left him with strength that still benefits him now.

Just as he said, "*I am bringing the set of ability to my current job, and it is much more useful than the education I had received in school.*" The coping skills he learned in the military provide him with a certain level of confidence to accomplish his goal, and make him believe that he has what it takes to fulfill the requirement and expectation of his current job even when he feels under pressure. Compared to military service, the pressure from work becomes relatively lighter and more bearable. To conclude, Ethan's one year in the military extends his level of endurance and resiliency needed for workplace challenges and help him adapt to the fast-paced work environment.

Overall Evaluation of College Experiences and Unfulfilled Expectations

After talking about his military experience, I asked Ethan to reflect and evaluate his overall experience in college years. He laughed, and said, "*Although it sounds like I valued my experiences outside of campus more, I still believe higher education makes me a different person, in a good way. It is definitely valuable.*" From his experiences, The Taiwanese society generally treats college students with respect, and is willing to provide them with profound learning

opportunities. *"Being a college student itself gives me some privileges that allowed me to try different things. It is also a very special period of time that you are free and flexible to try many options without penalty or terrible consequences. I mean, not many years in your "adulthood" you can live free like that."* He also considers the four years of young adulthood as important milestone for exploring and figuring out one's future career possibilities.

However, he regretted the weak connection between the curriculum and his current job. His college program, radio broadcasting, is one of the few programs that specifically focus on the profession in undergraduate level in Taiwan. And one of the program's distinguishing features is its tight connection with the industry and intense professional training. *"To be very honest, this is good and not so good. Only very limited number of my cohort really end up entering this professional field. As you know, this is a fading industry. For people like me who chose to take another professional path, I'd say most of the training and skills learned through the assigned courses and the set of curriculum could be a waste of time,"* he regretted.

After he graduated, he realized that the most "useful" courses he took in college were not from his own concentration. To his surprise, he found some general education courses that emphasized critical thinking skill through class discussion and assignments really helpful. He also appreciated the flexibility that allowed him to take these courses. *"After all, I do not think higher education is only about job preparation. I think it should be preparing a person with logical thinking and with the sense of social justice. Well, I don't know if I did reach that goal, at least I am trying."*

The conversation with Ethan brings both comfort and trouble to me. Ethan considers higher education as an impactful period in life, but obviously he expected more. The value of higher education should not be defined only by its curriculum; however, effective curriculum

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that builds general ability and attributes that would benefit students in their future development is still necessary.

One thing that Ethan mentioned in the interview really made me ponder. *"As I am working in a non-profit foundation, I am reminded quite often of the value and impact of my job, and how it could possibly bring changes. To me, the sense of social responsibility is not unrealistic. We are all trying to make changes, starting small,"* he reflected. He indicated that this position gave him opportunities to work with people from various backgrounds and socioeconomic classes, and he realized that a person's characters and "tendency to care" can do much more than he originally thought. "*There are some role models in the workplace that I constantly go to when I get confused. And back in college, some of the professors had similar impacts on me. For me, it is not their extraordinary intelligence that makes me want to approach them; it is their senses of care, social justice, their attitude toward life and challenges that really attract me and make me want to be like them,"* he said. After all, young adults are not expected to become efficient workers only, their intellectual, emotional, moral and spiritual growth should also be considered. While learning to be independent, college students and graduates are also eagerly looking for role models to help guide them through life struggles.

CASE THREE: ALAN ZHENG

Alan graduated from the Social Work Department at Taiwan's most prestigious university in 2016. At the time of the interview, he worked as a Congressman's assistant in Taipei. In addition to his official position, he was also a coach and a personal trainer in a local gym. We met in the late afternoon at a busy coffee shop near the Parliament, where the congressman's office was close by. Alan came into the coffee place, ordered a cup of coffee, and he also ordered his "lunch". *"This is one of those days that I just couldn't squeeze time for lunch,"* he said with a gentle smile. *"A large portion of my job is time-bounded. When it needs to be done, it needs to be done. To be honest, this is an insane life style. But, well, I like it."* Alan is accustomed to working long hours (over 12 hours a day) and weekends. According to him, this is 'the normal' in this field. Most of Alan's colleagues, other congressmen's assistants, are also recent graduates, young professionals like himself. They are energetic, passionate, and operate with a certain level of idealism. He said," I *do not consider this position as a long term career; but I think this is a great training process for me in my young age.*"

Career Trajectory

As a social work graduate, going into the political field does not seem to be intuitive. *"To be very honest, I knew that I wouldn't be a social worker or stay in the field when I was in freshman year in the social work program."* Alan was admitted to the social work program through The General College Entrance Examination. Even with the flexibility of Admission by Recommendation and Admission by Application options that allow students to go through application process that is similar to the United States, most of the high school students still enter

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universities through the old "one-test-decides-all" approach. After that, students will submit a list of their university department choices in order of preferences to the Examination Committee. The Committee allocates the applicants to different programs according to their test scores. In this system, applicants' high school performances and GPA will not be considered at all. *"I thought my test score was good enough for the law school or the politics department, the social work department was actually my buffer option. To my surprise, I ended up here."*

He did not know what social work was about when he was admitted, the only impression he had with the field was *"I knew it was a profession that helps people."* Alan is not the only one who is admitted to the "not-perfect-yet-acceptable-major" in Taiwan's current college entrance system. According to a national survey, over 52% Taiwanese college graduates think they choose the wrong majors (1111 Manpower Bank, 2016). The current Taiwanese education system encourages students to work hard preparing for tests, most importantly, for the final General College Entrance Examination, so students spend much time memorizing facts and knowledge for better test performance. However, most high school students are not given sufficient resources and opportunities to explore career options or understand the content of college programs. Simply put, high school students spend three years working hard intending to get into college, yet they spend only two weeks making choices regarding their life-long career paths. Obviously, the lack of exposure to career exploring opportunities leads to college students' learning and career development difficulties that are preventable.

However, Alan was not much bothered by the 'imperfect-matching'. He said, *"Well, actually the result did not bother me too much. My plan was to get a college degree. As for future employment, I did not care that much about my career. My family has a mid-size business, I think it will be easy for me to find something to do either in my father's company or through the*

family business network." This explains why Alan did not apply to transfer to other programs or universities during his college years.

When I talked to Alan, I was impressed with his clear logic and extensive experiences regarding his overall college experience. He was one of the few graduates that really knew what he wanted from higher education experiences. As a social work major graduate, going onto the politics path does not seem to be an intuitive route. After he graduated from college, he spent six months in a local welfare center as a social service coordinator to fulfill the alternative compulsory military service. After the term, instead of going back to the social work field, he spent some more time in Tainan working in a local gym as a business representative and a part-time personal trainer. *"Not long after, I realized that this is not the life that I want. So I went back to Taipei, and through my previous connections, I got my current position as a congressman assistant,"* he said. Because of his network from previous internship, he was introduced to his current boss, Congressman Wang, and started working for him.

College Experiences That Enhances Employability

Alan identified several chunks of experiences that he considers as beneficial for building his competency in succeeding in his current position.

Internships

First, he pointed to the influences the internship experiences brought him. Alan said:

> *I think internship is the most useful course among all the courses I took in college. It is the only connection the program could effectively offer between school and the field. For me pure academic discussion in class never help me apply the knowledge and theory to the need of workplace at all, it could be my personal preference.*

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In Alan's program, students are required to complete two practicums to meet the graduation requirement. *"Internship experience is one of the key factors that get me this job. Although I decided not to be a social worker, I am still doing something very closely related to my social work background,"* he said.

Alan interned in Taiwan Labor Front (TLF) in 2013 summer. Established in 1984, Taiwan Labor Front is the first labor activist organization in Taiwan. His current supervisor was the President of TLF when he interned there.

In 2013, the Taiwanese society experienced the tremendous power of social movement. TLF was one of the most influential organizations behind the movement, and that was the year Alan was interning. It was a perfect learning moment for someone who is interested in developing a career in social justice advocacy. He said,

> *My internship experience with TLF was a mind-blower. It taught me a lot of the concepts and critical details about social movement practices that is impossible to learn in classrooms. Those two months stroked me so hard that I decided to come back to the field after graduation.*

As a college student, Alan had been participating in and observing many protests against unjust incidents as a student at that time. *"I was there in the Sunflower Student Movement[10], and many other protests. At first I was just curious about the debates going on. After some deeper involvement, I became more active and grew the passion for advocating social justice. That was why I chose to intern with TLF."* The summer he spent in TLF was packed with solid and

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[10] The Sunflower Student Movement is associated with a protest movement driven by a coalition of students and civic groups that came to a head on March 18 and 10 April 2014, in the Congress and, later, also the Executive Department. The activists protested the passing of the Cross-Strait Service Trade Agreement (CSSTA) by the ruling party Kuomintang (KMT) at the legislature without clause-by-clause review. Main leaders of the movements were college students.

intensive learning. All interns were asked to contribute in the weekly book-sharing session. Book

selections were extensive, topics including labor right, occupational injury, human rights, etc.

were broadly included in the energetic discussions. They touched upon many timely issues and

controversial topics, and they also visited many influential organizations in the field. He

reflected,

I feel like as an intern there we are encouraged, or urged, to learn in an active way

that closely correspond to the timely needs and events that are happening in the society. The

engagement and habit of mind- research, debate, and examine issues from the social justice

perspective helped me build up critical thinking ability. The same passion or idealism also

drove me into my current job, urging to see if my input would change the system and make it

better.

Extracurricular Activity Engagement

Another significant part of Alan's college experience was his in-depth involvement in

extracurricular activities. In college years, Alan spent significant time in student organizations

and the sport's teams. When he started talking about his previous extracurricular engagement, I

felt his excitement. He reflected, *"If there is anything that is related to employability, it would be*

the people skill I gained through these experiences." He was involved with the university

orchestra, department baseball team, and the yoga club. During his sophomore year, he took the

position as the captain of baseball team and first chair violin of the orchestra. Coincidentally, the

main tasks of both leadership roles are about ensuring members' attendances and teamwork.

"College students are busy. A lot of students commit to more than one organization. Both the

baseball team and university orchestra need cooperation between all members, this is certainly a

challenge to me as the leader. I consider this as an important learning opportunity to shape my

leadership."

It is a pleasant surprise to find Alan talking about music like a music major student, as he demonstrated the enthusiasm and use accurate language when he shared his passion toward orchestra music. Through four years of college, he dedicatedly participated in almost every practice, concerts, and social events related to the orchestra. Interestingly, he found that the leadership role in the orchestra connected to his social work profession and his music passion in a way he never knew; he shared,

> *I appreciated how rigorous our rehearsal was. The level of stress of being the first chair*
> *was very heavy; it's not only about my own performance, it was also about ensuring every*
> *musician to reach the practice goal in limited time. I find it really interesting that some of*
> *planning strategies and skills that I learned in social work classes were put in use in*
> *implementing the orchestra's rehearse plan. Stuff like the Gantt chart, I did not get a chance*
> *to practice in my social work practice, yet I used it here.*

Alan learned to be disciplined and applied self-control strategies to reach the goal. He said, *"Through the years of engagement in the orchestra, the baseball team, and other stuffs; I feel like it has become a habit of mind, to setup goals, plan for it, and spurs on yourself for full completion in the managed time frame. I think I still benefit from it."*

Alan's current job requires a high level of self-discipline, and effective stress coping strategies. His regular work hours are from 7:30 am to 8 pm, plus frequent overtime on the weekends. There is not an official supervisor in the office; everyone is responsible for his own performance and schedule. As he said of his job, *"We are reporting to ourselves."* Reflecting on

our conversation, Alan's strict self-regulation, which is considered as a critical employable attribute, emerges from student organization involvement and leadership opportunities.

Employability Needed in The Political Field

When I asked Alan to recall how his higher education experience enabled him to adapt to his current job, he indicated a list of critical skills and attributes: Organization skills, political sensitivity, administrative ability, and communication skills.

Organization and Prioritization Skills

"To survive in the field, first of all, a capable worker needs the ability of organization, for sorting out main points or crux of an issue." Alan described his routine for preparing materials for the Congressman's oral interpellation. From his description, I get the feeling of the intensity and high stress of the position. Most of the assignments are to be finished in a timely manner and require a lot of communications and discussions between the team and the Congressman. He continued to say, " *Secondly, the research ability, especially the ability to broadly and extensively collect information from various sources."* This fast-paced work environment is challenging, especially when other administrative procedures are involved. *"When I was interning, the heavy loading of reading and project preparation was a good preparation. I am not saying that the stress level was similar. Comparing to real staff, the pressure for interns was like nothing. However, for the 'younger me', I felt pumped and got a taste of what real life in social movement engagement was like."*

Political Sensitivity

Furthermore, Alan's job currently requires strong communication skills, written and spoken. In the world of politics, language is powerful. *"To an extent, language is your asset.*

Politics is not a black-and-white world. One needs to be delicate and extremely sensitive with the use of language, tone, attitude, along with the make of the right sensation to steer the public favor to where you want it to go.'' He credits his current sensitivity and high-awareness to the constant and enduring engagement with the social media. *''After years of saturation in the social media, you learn the sense of political correctness, and know what will or will not irritate the community. Besides, the summer with TLF definitely was impactful, especially on the production of thought and actions. This is the real-time experience for witnessing the becoming of a movement.''* He said, the process is long, and cannot be shortened or displayed in a classroom, because this is the accumulation of unique experiences and practices.

Administrative Ability

Alan also mentioned the benefit of the ability for smooth administrative management. *"Maintaining efficiency with tedious administrative details is another challenge that I learned to manage. It is also about teamwork. These are thing that's not specifically assigned for one person. And ironically these details sometimes decide the success of the project. You can't divide the professional skill apart from excellent administrative skill."* Alan credits his student organization involvements and the leadership and organization opportunities he obtained from the orchestra and basketball team. *"I learned to make event plans, made the plan happen, managed budget, and coordinated members' various needs in accordance to the team's max benefit."* These skills turned out to be critical in helping him thrive in his job.

Communication Skills

"I can't say enough about the importance to express yourself clearly and confidently, both in oral communication and writing," he said. In college, Alan did a lot of project-based

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reports; he considered this component of his experience helpful. Other than that, the atmosphere in NTU that encourages freedom of speech, plus the fact that his peers and professors who don't hesitate to share their own opinion, inspired Alan to exchange his point of view with people around him. *"This is a learning process, through conversation, debate, even confrontation. This process does not necessarily need to take place in classrooms. Sometimes I feel like these off-table interactions are even more powerful and impacted me very much."*

When interning with TLF, the massive amount of reading, writing, and discussion also boosted his presentation skills and critical thinking abilities. He shared:

> *I still appreciate the intensive summer internship that pushed me to analyze a lot of data, reflections on topics, and the energetic environment that encouraged discussions from different aspects. My current position requires strong analytical and organization skills over huge amount of data, as well as the capability of gathering information and data. College experience built a good foundation of the skill set.*

Overall Evaluation of Higher Education Experiences and Unfulfilled Expectation

As for the value of higher education, Alan believes the resources to learn, and the emphasis and tolerance of diversity are two critical traits of higher education. *"If you really know what you want, this is the time you can learn valuable skills with low costs. Now I am no longer a student that I finally realized how pricey these resources could be."*

During his college years, Alan believes he experienced the richness of various opportunities offered to college students. He took many general education courses that did not directly apply to career or professional development, but expanded his horizons and broadened his scope. *"I probably had worked harder on those general education courses than my social work core courses,"* he said. For Alan, those classes inspired him to think outside of the box.

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"Now I feel that it is hard to tell if any course is 'useful' only depending on how it is related to the market of field of practice. I think some of the philosophy classes I took in college actually influence the way I think, and I did not realize that until recently."

"I think NTU is a great place to pursue a university degree. There are resources that everyone can benefit from, if you know what you want to learn." While he continued to share his opinions and experiences over the past years, one of his points caught me, *"I think the reason I am who I am, doing what I am doing now has a lot to do with my college experience. The whole campus atmosphere kind of encouraged me to care more about myself, and take social justice into my value system. ... Simply put, I think the most important value of higher education is to help the educated to fulfill their potential, be a complete person."*

However, he did not consider himself fully prepared for the challenges facing him when he stepped in the world of work. *"Although I thought I have developed these abilities to some extent, there is still a huge gap between what happens in classrooms and the real world."*

When I asked him to identify the biggest challenge encountered when he started working as a congressman assistant, he said,

Compromise. The world of politics is way more complicated than a student could possibly 'learn' in university classrooms. The past year I worked under a congressman of the ruling party. Until then I started to understand how these compromises from idealism are unavoidable and even necessary in the political negotiation process. It is too complicated and intricate for even higher education educators and students to see the whole picture, even though they are given the condition to trace the background and examine the situation from theoretical perspective. For me, now some of my naïve and idealistic expectation over the politics are more realistic, down to the ground."

As a new assistant, he needs to learn a lot from scratch. The procedures, the appropriate tone to speak and deal with people, day-to-day operation details, and also the culture of the parliament- all these need to be learned in a time-bound manner. In addition, this fast-paced environment is very different from campus. For him, there was still a gap that was beyond his expectation.

The Disappointment Toward the Environment

At the point we had this interview, he wanted to end the term as the congressman's assistant in a few months and move on to something else; yet, he had no concrete plan for the next career step. For Alan, there is constantly a struggle in building up his professional career in the field,

> *Here is a sad fact: many people consider us, the social science majored graduates, as "not professional." In fact, I understand where the perception comes from. Unlike engineering or computer science majors, we do not have a specific set of skills that is irreplaceable. Plus, the starting salary in our field is much lower than the STEM field graduates. Well, I think recent social science majored graduates like me need more time to find our own path.*

As we started to talk about his future, his expression turns from excitement to a bit gloomy. *"I would not say it is hard to find a living in Taiwan, but it is hard to remain in abundant hope. The economic and political challenges for Taiwan are difficult. For young people like me, I cannot reasonably plan for buying a house because with the wage level, it is simply impossible. Well, it is not to say that we are not happy, but we can only enjoy little things*

like going to a fancy restaurant or hang out with friends on weekends. Planning for the future is a luxury. "

In his current position, the monthly wage started from NT$30,000 (US$1000) per month, and went up to NT$33,000 (US$1100) from the second year. Plus his part-time job in the gym, averagely he earns NT$45,000(US$1500) every month. In Taipei, the living cost for a single young professional who lives outside of home is around NT$20,000-25,000 (US$700- $850). However, it is still hard to afford purchase of property with his financial status.

Alan is not in a sense of powerlessness alone. The plight young workers like Alan are facing highlights a serious problem for Taiwan which has gone from a young and vibrant Tiger economy to an aging and unsteady one in just two generations: the working-age population is not growing fast enough, nor earning nearly enough to pay for their parents' retirement. Young workers that only rely on monthly wages could hardly afford to purchase any property. Many of the young people do not think they can afford to get married or have children either. Sadly, many young people do not hold positive hope for the future. A few months after the interview, Alan quit his position in Taipei. He decided to go back to his hometown, Tainan, and help his father with the family business. For Alan, he is lucky to have the family business as his buffer option. But not many young graduates are as lucky.

CROSS-CASE DISCUSSIONS

The three cases presented above all carry unique career transition trajectories. However, through their employment experiences, all participants, along with the effective, and not so effective, approaches to cultivate these capabilities within college years, repeatedly mention some needed employable attributes. There also shared struggles and uncertainties over their future.

Employable Attributes Needed in Social Science Field

The participants identified several attributes and skills that he found critical to be adaptable and successful in workplace.

Communication and people skills

First, all of the participants indicated the importance of communication skills. Regardless of the type of work recent graduates are engaged in, people skills play a significant role if graduates want to succeed in workplaces. All three participants realized that decent communication skills impact the smoothness and quality of teamwork and contribute to the efficiency of the workplace.

Critical thinking skills

Secondly, critical thinking skill matters, especially when it comes to the moments graduates need to demonstrate analyzing ability to help their team have a breakthrough. Especially in the social science fields, many projects are about proposing feasible plans and discussion between colleagues. The ability to think clearly, express clearly, and discuss logically is key to the ability set.

Organization skills

Third, they all mentioned administrative organization skills, which include prioritizing responsibilities and handling day-to-day operation tasks. The fact that many social science majors begin their careers with administrative positions highlights the importance of administrative skills.

Stress coping skills

Asian work culture tends to expect employees demonstrate their full efforts, which often times result in volunteering extra hours and delayed off time without pay. Besides long work hours, the transition from studenthood to professional life could be stressful, given the new role expectation and responsibility, young graduates need to adapt to their new role with adequate stress coping skills.

Professional knowledge and skills

Interestingly, only Helen, the law school graduate, mentioned the importance of professional knowledge. As Alan said, the "vague professionalism" social science major students graduate with does not make them stand out in the job market. Even with perfect GPAs, young graduates often need to build up their skills and professionalism from scratch when they enter the world of work. Hence, career development for graduates of these fields should place emphasis on developing graduates' expertise and competency in building their competitiveness in the job market.

Effective Approaches That Build Employability

Curriculum

1. **Disciplinary core courses.** The disciplinary core courses mentioned here refer to courses that provide essential knowledge foundation, skills, and other relevant trainings in the

profession. The set of courses are intended to help students build solid theoretical background and practical skill sets needed for the professional field. The depth and practical level of the core-courses did not impress the recent graduates for various reasons, including the distance between curriculum and real practice, the pedagogical approaches did not inspire students' motivation for learning, and the limited professional skills obtained through the courses. For social science major graduates, many considered the curriculum too shallow, too theoretical and distant from the workplace needs. Some said that they needed to build up essential professional skills from scratch when they entered their career. It is worth looking into the struggle instructors and graduates are facing in finding the balance of curriculum design that can satisfy most students' need.

Besides *what* is being taught in classrooms, *how* curriculum and knowledge are delivered matters more. The courses remembered and recommended by them typically were taught by engaging instructors, who utilized approaches that facilitated students' active learning, and effectively involved students in discussion and reflections. Moreover, most of these courses asked for teamwork-based projects and presentations. Instead of sitting in the classroom taking notes, graduates' reflections point out the significance of students' active engagement in class, as well as project-based learning. The implementation of projects effectively expands graduates' critical thinking, organization and presentations skill that they later consider significant in workplaces.

2.**General education courses.** Interestingly, the courses that the research participants named as the most useful or impressive ones were mostly not the program core courses**.** All three participants affirmed the value of the general education courses that expanded their knowledge and skills outside of their chosen disciplines. Some even considered general education courses

the most valuable asset in the whole higher education experience. Not only the courses that allow students to obtain knowledge outside of graduates' professional fields, the opportunities to meet and work with people from various backgrounds, and the opportunities to build social networks were equally exciting and beneficial.

Engagement in extracurricular activity

Student organization engagement and volunteer experiences were perceived as major employable skill builders in the graduates' higher education experiences.

1. **Leadership training opportunities.** Leadership opportunities are widespread in college campus within student organizations. According to the students, extracurricular activities enabled them to gain insights of effective cooperation, built skills to resolve conflicts and to deal with confrontations, learn about event planning and implementation, as well as the ability to cope with stress that comes multiple commitments and task deadlines.

2. **Social networks.** For social science field college graduates, extensive social networks and strong references play critical roles in the job searching process, especially for the positions that do not require professional certificates or specific skills. Additionally, building networks in graduates' professional field is also important for long-term career development.

3. **Time management**. One significant challenge for students who are involved in extracurricular activities is the busy schedule and time pressure due to multiple deadlines. Many college students gain the time management skills under the particular circumstance. As a result, graduates with previous extracurricular engagement tend to demonstrate better adaptation to the fast-pace and multi-tasking work environment, which is now the norm of most workplaces.

4. **Personal network.** All participants mention how the enduring friendships and connections they build with friends in the student organizations supported their transition from studenthood to the professional life. The relationships college students build in student organizations are connected with similar interests, most of the time without competition between one another. Graduates reported that these relationships support them in time of transition hardships.

Work-related engagement

All the participants indicated that they benefited from work-related engagement in the university. Through either internship or part-time jobs, students engaged in environment and workplace regulations that effectively pushed them to learn about and adapt to the workplace culture and requirements. Moreover, through the work-related engagement, college students are given opportunities to discover their strengths and weaknesses in regard to their knowledge and skills in the real world setting; they could also learn what the needed skills really are.

1. <u>**Internship**</u>. Participants expressed that internship opportunities allowed them to gain on-site sensitivity and knowledge that they would not be able to learn in classrooms. The hands-on practicum also allows them to "test-drive" their career options. Before entering the field, they could examine if this is the path would work out for them. Other benefits internships bring include: strong networks that might lead to official job offers, mentoring experiences that allow graduates to reflect on their learning outcomes, and the opportunity to learn from the professional role models.

2. <u>**Part-time job**</u>. Most of the part-time jobs that college students take may not be relevant to their professional field; however, employment experiences help young adults build

work ethics, get a sense of what employers are looking for regarding general skills and attributes, also push them to better manage their time and energy.

The Structural Challenges Facing Social Science Field College Graduates

Semi-Professionalism

As mentioned before, one of plights social science field college graduates may encounter is their self-perceived lack of professional expertise. The job market does not provide sufficient position openings specifically tailored for social science majors. Unlike the STEM field where graduates bring specific skills and knowledge that are not easily replaceable, social science graduates often start with administrative positions that do not require specific skill sets. Therefore, for social science graduates, career coaching that helps them develop expertise and explore career opportunities that match their strength is especially critical in the transition to the workplace.

Low starting wage

Typically Taiwanese graduates from the social science majors would experience the largest gap between their expected beginning wage and their realistic salary. According to Ho (2015), graduates who majored in social sciences and arts asked for a beginning pay approximately 30% higher than what employers wished to pay, which is relatively the highest among all fields. Plus, the overall starting salary for fresh graduates in Taiwan is around NT$ 31,000-34,000 (US$1,033- 1,133) per month. In the participants cases, although they did not mention about the discrepency between expected and real salary; however, they mentioned about the lack of financial security that make them hesitate to make big plans for their future. For

graduates that do not live with their family, it is hard to purchase a vehicle or a property. The overall low salary is a problem more salient in social science field than other fields.

Global competition

As the market opens up, the flow of talent become freer than ever. For Taiwanese college graduates, they are no longer competing amongst themselves only; some of them are beginning to sense the pressure coming from the global market. Although the Taiwanese government has set up rigorous policies that make it hard for foreign workers to stay and work in Taiwan to minimize the competition, current Taiwanese economy could not provide satisfying positions and salary to keep talented young people in the country. While many companies are seeking development opportunities overseas, especially in China and other Southeast Asian countries, more and more young graduates are forced to consider the possibility of leaving their country and working abroad. With the training and culture they bring with them, are they strong or competent enough to face the challenges? The answer is still unknown.

Chapter Five:
The STEM Field Graduates' Experience

Introduction

In this era of knowledge-driven economy, cutting-edge research that produces innovative results have become crucial factors in determining a nation's international competitiveness. Over the past 60 years, Taiwan has changed from a net importer dealing primarily in agricultural products to a leading exporter of industrial products, such as machinery and electrical equipment. The advancement of science and technology has driven massive development for the economy in Taiwan; therefore, STEM education is considered a priority in Taiwan's school system (Hsuan, 2006; Ku & Lee, 2001; Lee & Lin, 2012).

In 2011, the number of enrolled students for undergraduate programs in Taiwan was about 1.2 millions. Among them, students participating in STEM-related fields took up 52.57% of total enrollment. Additionally, the total enrollment number of postgraduate programs in 2011 was over two hundred thousands; and more than half of them majored in STEM-related fields. From the data, it could be seen that compared with humanity and social science studies, science-related majors had the largest participation of students at all levels of programs in Taiwan (MOE, 2011).

Many people believe that STEM field is the future. There are a number of reasons behind it. First of all, the ROI, or the Return on Investment for science-related majors is notable. According to the Winter 2017 Salary Survey Report from the nonprofit National Association of Colleges and Employers (NACE), employers projected that average starting salaries for students earning bachelor's degrees in the STEM-related disciplines of engineering, computer science, and math and science would be the highest among Class of 2017 graduates. From 2006 to 2011,

employees in STEM-related industries took up more than half of the total employment. In addition, among the top 10 high monthly earning industries in 2011, eight were considered to be STEM-related fields. Employers in Taiwan, and many other countries, are willing to pay higher salaries for STEM graduates compared to graduates of other fields. The average monthly earnings of employees in STEM-related industries was NT$56,700 (US$1,890) in 2011, about 17% higher than the overall average monthly earning (DGBAS, 2012).

However, that is only one side of the story. For those who work in technology-enhanced environments, the pace and round-the-clock activity can be considered to be stressful. Some scholars have even indicated the possibility for people to develop an addiction to work (Korac-Kakabadse & Kakabadse, 1998, Kakabadse et al., 2009, Robinson, 2007). Strong work ethic is ingrained in Taiwanese society, especially in the fast-expanding STEM industry. The cost of decent pay is often long work hours, demanding responsibilities, and high pressure. How are Taiwanese STEM field graduates adapting to such environment? And how are they coping with fast-advancing tech trends? In this chapter, three recent college graduates from the STEM field share their career transition experiences, with reflections of how their college experiences contributed to their adaptation in the transition.

CASE ONE: CHARLIE CHEN

Charlie graduated from the mechanical engineering department with a concentration in automobile engineering at a private university in Taipei, Taiwan in 2014. He currently works as a marketing officer in a startup electronic commerce (E-commerce) company that imports motorcycle accessories from foreign countries. The e-commerce market in Taiwan has grown at a rapid pace over the past few years, with a market size of US$37.6 billion in 2016, and a 5-year average growth rate of 10-20% (The U.S. Department of Commerce, 2017). The company Charlie works for launched their operation in 2014 on the university campus under a special project of an industry-university cooperation agreement, and rented an office space at the university where Charlie was studying. Through the reference of his advisor, Charlie was introduced to the manager and started working part-time during his senior year. After graduation and his one-year compulsory military service, he took a job offer with the same company and started his current position there.

To Charlie, entering this field was not in his original career plan. *"Actually, I did not know much about motorcycles when I was studying in college. I was more interested in four-wheel automobile engineering, and now my interests and expertise transferred to the two-wheeled world,"* he laughed when he said this. Charlie attended a vocational high school for three years; at that time, his central skill set was automobile engineering and car repairing. When it came time to choose college programs, he decided he wanted to go further into automobile engineering and subsequently chose the mechanical engineering department that offered an automobile engineering concentration at the university.

Trajectory leading to the field

Charlie's current position as the marketing officer required him to maintain in-depth knowledge and awareness of the motorcycle market. Simply put, Charlie's job is to understand and meet the motorcycle customer community's habits and needs.

The company Charlie works for imports heavy motorcycles and parts from Japan and other countries. Unlike many other commodities, owning a heavy motorcycle as a hobby is a luxury in Taiwan and his company is catered to a specific clientele. Charlie said, "The market is actually growing fast. *To effectively reach out to the target group, and grow with them, it takes smart strategies and serious efforts. What I do most is to gain in-depth knowledge of my clients, import products and new knowledge of the field, and help with the edification of the field in Taiwan.*" As the marketing officer, Charlie analyzes a huge amount of trading records from a variety of sources daily to keep up with the trend. "*We have been collecting data for nearly three years, and by analyzing the data, it helps us to learn more about my customers and popular products,*" he said. Charlie told me how they utilize Google analytic tools and other versatile analytical programs that help him make marketing decisions.

Charlie did not take any marketing course as an undergraduate. Most of the skills and knowledge Charlie currently utilize in his job have very little to do with his chosen major in college. For him, transitioning between fields and acquiring different needed skills brought a great amount of challenges in the transition. However, Charlie considers himself adapting well to his current role, and enjoying his new career. "*Although this job is full of challenges, and I do not get paid very well, I still see my future in this field. And most importantly, I think I have what it takes to succeed in the area,*" he said.

College Experiences that Enhances Employability

When I asked Charlie to reflect on how general college experiences contributed to the development of his employability, Charlie was silent for a while. Then he answered, *"Well, it is complicated. For a person like me who did not end up going into the automobile industry, my perception might be different from the ones who did."* However, Charlie still indicated several key college experiences that he considered to be helpful in building skills and abilities needed for the his professional career.

The Industry-University Cooperation Model

The private university Charlie attended was established in the 1960s in response to the lack of mid-level industrial professionals when Taiwan's industrial and economic development was burgeoning. Even today, this university is still known for its strong university-industry cooperation and solid internship traditions that require students to spend their junior year in full-time paid internships in cooperation with local or international industrial companies.

"I think the internship year was the most well-spent year in college. We were treated as official employees with intensive responsibilities, but were allowed to make mistakes. I learned not only skills, but also the taste of real world of work," Charlie reflected. Charlie considered the internship requirement to be "the most valuable asset" of the program, which differentiates the university's graduates from others by their extensive hands-on experiences and practical skills. *"If there is anything that makes me more competitive in the job market, that will definitely be the internship experience."*

Centralized Management Over Students' Life

The university Charlie attended was voted as "the most exhausting university in Taiwan" (Taiwan ET News, 2014) All students are required to maintain residency at the campus dorms

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for four full years. Not only do students live on campus, faculty members are provided campus housing so as to live close to students. In a metropolitan area like the city where the university is located, it is difficult to afford buying a house. Thus, many faculty members take advantage and live on campus. Moreover, freshmen and junior students are obligated to participate in congregational morning workouts every morning at 6:30 a.m. from Monday to Friday. The not-so-typical centralized management over students' daily schedule and curriculum trajectory is unique among Taiwanese higher education institutions.

Not all students appreciate the military-like management. However, the industry acknowledges the disciplines and effective learning outcomes from the university by welcoming its graduates with open arms. "*Basically, graduates from my university are considered the most qualified potential employees in the automobile manufacturing industries. We have much more practical experiences than graduates from other universities*," Charlie reflected.

The Impact of Faculty Members

When asked what elements make the university's graduates competitive in the job market, Charlie pointed to a special professor. *"All the students would remember this professor because his course is known to be the most solid, intensive, and strictly-graded among all core courses."* Charlie referred the professor's insistence on pursuing skill accuracy as the Shokunin Culture[11] (Japanese craftsman culture). While many students treat many other courses lightly, almost every student stays alert in this professor's classroom. "*He is very serious about making every detail right. He teaches attentively, and he expects the same attitude from us. The load of the course is quite heavy, and as I can think of, those requirements are very reasonable if a*

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[11] Shokunin Culture (職人文化), or Shokunin Spirit, which is defined as an artisan who masters their profession. The Japanese apprentice is taught that Shokunin means not only having technical skills, but also implies an attitude and social consciousness. The Shokunin has a social obligation to work his/her best for the general welfare of the people.

student really wants to get a good hold on the automobile engineering theory and practice." As Charlie talked about this professor, I felt his respect and acknowledgement toward this professor and the way he handles the course. "*The industry knows that if we got through the 'torture' from him, they can trust his students,*" he teased, with respect. Charlie's positive engagement in this faculty's classroom points out the significant importance of an effective instructor. *"Not only did his classroom management and attitude toward the course influence me, his knowledge and in-depth connection with the industry inspired me to learn more because I know that what he was teaching would be useful,"* Charlie stated.

Facilities That Keep Up with Industry Trend

Moreover, the resources on campus were sufficient for nurturing students with current knowledge and skills needed in the industry. The company that established the university also owned an automobile company but failed to continue operation in 2014 due to the long term financial loss of the brand. To maximize the remaining value of the leftover equipment, the company placed all the automobile production on campus for the use of teaching courses. *"As we were learning the theory and skills of auto engineering, accessibility to these equipment makes a huge difference. No other universities in this field has resources like ours in Taiwan,"* he said. When he was interning in an international automobile factory, he realized how the presence of these modern equipment helped him understand crucial concepts and obtain the necessary skills faster than other young people. *"I have seen and used similar machines back in school,"* he said, *"That definitely shortened my transition time and allowed me to learn more!"*

Extracurricular Activity Engagement

In addition, Charlie's continuous involvement in the department table tennis team also positively contributed to his perceived employability building experience. He said, *"This might*

surprise you: I think my continuous engagement with table tennis actually helps me adapt faster and better in the workplace." For four years, Charlie actively engaged in the practice and tournament with the team. Meanwhile, he tutored table tennis to young kids as a way to earn money. For Charlie, it was not only a sport he was good at; he thought it also helped him to shape a calming attitude when facing pressure. He explained that, in order to win in a table tennis game, a player needs to be able to control his emotions and strength in order to reach a balance between excitement and disappointment. *"I apply the same attitude on my job, especially when I am dealing with pressure,"* he said.

Social Network

Besides building up his stress-coping capacity, four years of interactions with teammates and numerous tournament trips helped Charlie build up strong friendships with his teammates. However, Charlie did not remain close friends with anyone from his cohort class after graduation. Due to the internship application system that weighted grade and class ranking heavily, competition between classmates had torn class relationships apart even before the junior year. In contrast, the relationships he built with the department table tennis team has endured up to the time of the interview.

"I think it is not only about social networking. Getting involved in student organization also means you get the chance to practice leadership and coordination. Besides these practical benefits, I think concentrating on advancing skills on a specific sport itself is beneficial. From this perspective, I'd say maybe the most important part of my college experiences is the extra-curricular involvement I had," he reflected.

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The Gap Between Classrooms and Workplace

When asked about how his college experience contributed to his employment arrangement, Charlie pondered for a while and responded with hesitation. *"I feel like personal characteristics contributed more to my success in locating my first job. My boss hired me because of my interests, or passion, on motorcycles, and my previous part-time work experience with them. And of course, I did pretty well with the part-time job,"* he laughed.

Different Expectation

As for the transition to his current position and how he adapted to it, Charlie wrote in his reflection:

> *I think there is a huge gap between the higher education I received and the skillset that the industry is looking for. Taiwanese education system is teaching students to be too tame and too obedient. In the industry that I am currently working in, you need to be able to make independent decisions that help the company to grow, not to keep it where it is now. To be able to do so, one needs to have his/her own ideas, and know how to express and sell the ideas to colleagues.*

In the first few months Charlie works in the new field, he clearly felt the gap between the curriculum goal and the industry expectation manifested. *"My boss doesn't care how late I stay in the office. I need to demonstrate my ability by presenting the results that he expects from my work, not by work day-and-night without taking any rest."* Instead, Charlie realized that in this new firm, critical thinking skills, presentation and communication skills, plus innovation and problem-solving abilities are much more important than merely the attributes of resilience and diligence. Charlie thinks that the management team has emphasized much more on efficiency

and creative thinking. Also, they acknowledge staff members who demonstrate clear logic, problem-solving ability, and innovative thinking that help form new business strategies.

Asian Work Culture

However, Charlie does work long hours. Although the official office hours run from 9am-6pm, he often stays until 9pm to finish his work. "*I feel that the most important characteristics employers are looking for are work ethic and stability."* For him, learning how e-commerce model works is a brand-new experience. *"No one would ask you to stay late, but if you don't have the sense of completing your portion of work before the end of day, I don't think you will be able to make through the first three trial months. I know my supervisor cares about how devoted his employees are regarding the work we are doing."* The first three-month trial period Charlie indicates still strongly influences new employees' sense of security. Many companies set up a three-month trial period to test out the adaptability of the new employees. This period is taxing due to the reduced monthly wage, lack of benefits, and rigorous evaluation at the end of the trial. Those who pass such an evaluation will be formally hired while others are let go. Recent graduates know that this is a critical period of time to impress employers with their diligence and other outstanding abilities. For many employers with a traditional Asian work ethic, seeing new employees stay late is practically a prerequisite for employment consideration. It is ironic, and unfortunate, to hear how Charlie understood that working long hours is not a requirement, but still felt constrained to display his own "work ethic".

The Missing Link: The Ability to Learn and Cultivating an Innovative Mind

"*I feel like I am always learning new concepts and new strategies for expanding the market, targeting the clients, etc. There are a lot of skills that I am practicing in this position where I can only learn when I am on the job. The ability to learn, and problem-solving skills are*

extremely important if you want to be successful in the field," Charlie said. For him, this is something that is missing in his college experience, especially in this particular university.

Charlie realized the knowledge and skills learned in college could not be applied to a different, developing new field. The way students are "trained" in college makes them efficient workers who are able to precisely follow Standard Operating Procedures (SOP). However, *"There is no such thing as an SOP in a newly developing commercial field,"* Charlie reflected. Charlie was disappointed about how higher education cannot keep up with the fast-changing trends in the industry. *"I think we are missing a big part: teaching college students the ability to learn,"* he said. As the world changes in extreme speed, college graduates should possess the ability to learn even after leaving campus to keep up with the trend, as well as obtaining the timely needed knowledge and skills in the professional field. For Charlie, he did not think college education equipped him with these essential abilities.

The Useless Curriculum

Charlie was not impressed with the curriculum design, or the overall class experience he had. Charlie thought most of the theory-based courses were taught in a "useless manner." He thought most of the core courses and the theories he learned in school could not be used in a real job, even if one enters the automobile industry. *"I think only the graduates who choose to continue pursuing graduate degrees may find it worth studying. To me, nearly nothing I had been taught in class was useful,"* he shared. Except for the internships, most of the courses Charlie took only asked him to sit in the class, listen without interaction with the lecturer, memorize the knowledge, and take written tests. *"I did not fail any courses, but I don't remember anything from the classes, except for the very solid course that I told you about earlier,"* he said woefully.

The Overall Evaluation of Higher Education Experiences

Although Charlie was not impressed with the curriculum of his program, he did not deny the value of a college degree. *"It is a basic prerequisite to get into the current Taiwanese job market,"* he said. *"I realized that a college degree is like an admission ticket that allows you to start your career in a certain field. However, as for the skills or professional knowledge, I think most of us need to start learning like we had nothing before."*

College Graduates as A Piece of White Paper?

Charlie told me that his current boss thinks "college graduates are like a piece of white paper," which he refers as having no skills needed for the job. *"Well, after two years in the industry, and some experiences in interviewing applicants, I finally know what my boss was looking for,"* he said. *"To impress the interviewers, besides meeting all the listed qualifications on the job description, most importantly one needs to demonstrate his logical thinking, and appropriate conversation skills."* And for Charlie, the curriculum and overall higher education experience did not prepare him or most college students well for such requirements.

Future Plans

When asked about what he expects himself in the future, he answered with excitement, *"I think the field I am currently working in has great potential. Compared to my other friends, my salary is not good enough. But I am looking forward to the possible expansion of this electronic commercial trend."* Charlie's boss also encouraged him to explore the possibility of opening a new market by visiting Japan. *"I feel like there are many exciting opportunities out there."* However, when he thought about the economic downturn and the impossibly high price of housing in Taipei, he still felt discouraged. *"It is hard for me to see where I will be in ten years.*

The economy does not give me much hope to see myself settled in society. Well, there is not much I can do about it. The only thing that is reasonable to do is to work hard and see where life is taking me to," he said.

Charlie is not alone among young people who cannot see a clear future for themselves. As Taiwan is facing a difficult economic and political plight, Taiwanese young people are not only competing with each other. They are also competing with other competitive talents in the globalized market. Graduates need to be able to face the challenges coming from foreign markets and industries. For example, in Charlie's line of employment, the heavy motorcycle market relies heavily on the import from Japan and other foreign countries. To thrive in such a market, graduates need to possess language abilities, international business negotiation skills, as well as the ability to maintain and open new local market possibilities.

The E-Commerce and Taiwan Economy

As Charlie mentioned, the electronic commercial model could be the future. Taiwan's e-commerce penetration rate is one of the highest in the world. By 2016, 84.8% of Taiwan's population had access to the internet. E-commerce legislation is also continuously being drafted and amended in Taiwan to better facilitate and regulate this growing industry. As the e-commerce market in Taiwan continues to develop, consumption trends amongst online shoppers shift simultaneously with e-commerce's growth. Whereas the initial advantage of e-commerce was to provide better access to foreign trends unavailable in Taiwan's traditional retail market, Taiwanese users of e-commerce platforms have come to value convenience that online shopping has brought in the past several years. [12] Taiwan's geographical proximity to China and Japan has led to increased cross-border e-commerce, where Taiwanese shoppers buy from Chinese and

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[12] https://www.export.gov/article?id=Taiwan-ecommerce

Japanese sites, and vice versa. Charlie's company is one such company that focuses on Japanese merchandise.

However, as more young people enter the e-commerce business, the higher education system has not actively responded to the rapid changes in the industry, leaving students lacking the needed skills and talents for the field. As a result, many young people like Charlie have entered the job market ill-equipped, and need to start from scratch. Charlie's experience points out to a gap in the current higher education system that needs to be amended.

CASE TWO: TOBEY YANG

Tobey graduated from the computer science and information engineering program from a top university in Taipei. For many years, this particular program has been the most popular program among science-oriented prospective college students; only high school graduates with the best college examination test scores would be admitted. As a young woman, Tobey was one of only 10 girls in her male-dominated 80-people cohort. Currently, Tobey works as an operation consultant for a famous international software company. This is her first job after graduation from college.

Career Trajectory

Tobey grew up in southern Taiwan, and left home early to attend the best girls' boarding high school in Taipei since she was fifteen years old. Early independence did not trouble her too much, and actually gave her the freedom and confidence to choose her career path as she liked when the right timing arrived. Like many Taiwanese parents, Tobey's parents wished that she would apply for medical school and become a doctor. However, Tobey knew that she had no passion in medical research or practice. A high school programming class inspired her interest, and gradually steered her way toward the information study field.

She said:

The programing class I took in high school was my first encounter with computer software engineering. Some of my friends really hated it but I liked the logical referencing process very much, and enjoyed the sense of accomplishment when I could make things work with coding and programming. After that engagement, I was pretty sure that I would be studying in this field in college."

When Tobey was filling out the application card for university programs, she put information management and information engineering as her priority options. As she expected, she was admitted to the best computer-engineering program in the country in the 2012 fall semester. Still, even with a relatively "clearer" vision of her future career compared to other high school graduates, Tobey realized that the scope and depth of information study were beyond her imagination. *"The computer science and information engineering field has its own energetic history, and many exciting and trendy developing innovations. I did not know that it was a lot more than writing codes,"* she reflected.

The company Tobey works for is an American multinational technology company with operations in over 170 countries, including Taiwan. Tobey joined the team in the year the company had its biggest hiring event in 10 years. This hiring event was a response to the corporation's innovation plan and new strategies. A total number of 15 recent graduates like Tobey were recruited in the cohort for intensive training and team project implementation plans. Tobey's position as an operation consultant allows her to use her software development expertise. Other than developing new apps and service programs, her position also involves a lot of communication with different ends, including clients and the tech support team in the company.

College Experiences that Build Strong Employability

Tobey pointed to some academic and extracurricular involvement that she considers as helpful in cultivating her employability.

Curriculum

Tobey considered the "Network and service platform design" to be the most impressive and useful course she had taken in the university. *"That is one of only a few courses that I think reflects the industry's need and current trend,"* Tobey said. The way the professor organized the course was very different from many others. When the class met together every week, the professor would only go through a few themes and main concepts of the session, then left the rest of the time for students to discuss the weekly assignment in groups. The assignments were usually interesting practical projects. While trying to solve the problems and implement the projects, students needed to apply the newly learned concepts explained in the class. Most importantly, these practices were very often utilized in current information science industry.

She said, *"I appreciated that the professor blended in design thinking[13] as the approach in his class, to inspire us to explore projects that interested us. Moreover, at the end of the course, Professor Ho held a Hackathon[14], and invited experts in the field from the industry to join as judges and participate in the discussion panel."* Tobey considers that course as the most helpful as the course reflects the industry-proof procedure, which actively encourages students to gain strong abilities.

However, not many courses were well designed to meet students' needs. As I asked Tobey how much she perceived higher education had prepared her for the skills needed for her current position, she said, *"Probably only 20 to 30 percent. Technology is renovating at an*

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[13] Design thinking is considered to be a human-centered approach to innovation that draws from the designers' toolkit to integrate the needs of people, technology, and the requirement for business success. It refers to creative strategies during the process of designing.

[14] Hackathon, also known as a hackfest or code fest, is a design event in which computer programmers and others involved in software development, often including subject-matter-experts, collaborate intensively on software projects.

incredible speed. Many professors can't keep up with what's really happening in the industry.
This is the reality of this field."

Internship Experiences

Tobey actively engaged in two internship opportunities over two summers. These internships turned out to be critical learning experiences that enhanced her professional skills, as well as communication and adapting skills to the workplace culture. *"I wouldn't think I'd know much about how real companies and the industry work without these internships," she said.*

In fact, the network built through these internships eventually helped her attain her current position. Internship experience in Tobey's field is weighted heavily in the job market. Some of the renowned international corporations, like Google, Inc., even offer its outstanding interns the opportunity to be converted as full-time employees. Other than adding a significant line on the resume, Tobey considers internship as an important process for career exploration. *"I would advise college students to actively apply for and be involved in internships during junior and senior years. For me, it was more than the taste of the real world; it is the needed phase for young people like us to exploring career opportunities,"* she said. Many of her friends who did not have internship experiences had a difficult time finding "right fit" positions. Tobey thinks the "trial-and-error" process could be shortened with internship engagement.

The Brand-name University Degree

As with many top-tier corporations, the company Tobey currently works for tends to hire graduates from top universities. In a regular hiring process, the human resource department examines job applications through regular channels before they reach the hiring sectors. In most cases, the first criteria human resources staff looks at would be the universities from which the applicants graduated. *"Top university degrees are like an admission to the hiring game,"* she

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said. *"Unless the applicant interned here before, or is referred by current employees, it is hard to make it to the interview candidate list without a brand-name degree. Well, it sounds cruel; but it is what's happening in the field."*

Tobey's experiences and narration pointed to the importance of strong internship and network. Some researches point out that employers only spend 5-10 seconds on a single resume or cover letter. A brand-name university degree certainly would pop into employers' eyes among the sea of resumes. For graduates who do not have shiny degrees, internships or strong references matter tremendously.

Needed Employable Attributes in The Field

Solid Professional Knowledge and Skills

Still, the degree only helps applicants make it to the candidate list; it is the skills and employable attributes that really determine the final hiring decisions. *"I am starting to get involved in the hiring process. It is very different to be on the other side of the scene. The interviewing and hiring process actually involve a significant amount of skills and knowledge demonstration, as well as observation of characteristics and teamwork capabilities,"* she said. After Tobey started her professional career, she was grateful that she worked hard on most of the core courses, and had completed many projects through different courses. *"Actually, I wish I had put in more efforts on digging in the theories when I was back in the classes. Now I realize that I need them, but just don't have enough time and energy to make it up,"* she noted with some regret. According to Tobey's experiences and many of her friends who are working in top companies, passing the written test and performing well during the interview process are equally important.

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Problem Solving Skills

Many high-tech companies apply similar interview procedures, by including project-based problem-solving tests, and meeting with the team as a standard process. *"By observing applicants' problem solving skills, we will be able to tell if he possesses the knowledge and skill set needed for the position. Actually, the knowledge and skill parts are closely related to the contents in university classrooms. However, we do not expect applicants to solve a problem immediately. Sometimes, the problem is complicated, and we will give out hints of guidance. This is actually a more important part - we want to see if he can catch the hint and guidance smoothly, and the way he responds to frustration also matters,"* she said. Tobey pointed out that the employable attributes the employers are looking for include demonstration of critical thinking, communication skills, and the capability to work with the team.

Teamwork, Communication Skill and Leadership

Tobey appreciates that many of her university projects were assigned as group projects that allowed her to work with people from different backgrounds. She considered it an important training process as it prepared her well for the workplace needs. *"I realized that the effort put into making effective communication happens is actually more important than merely 'work hard' by yourself. Every step of progress in the projects is best to be built upon the consensus of the team. You could work hard, but if it's not agreed by all, all these hard work could be just in vain."* In addition to the course assignments, she was also involved in the department athletic team and a student service-learning organization in the university. "*I would think that these opportunities helped me built leadership and organization skills, as well as social networks. In fact, I find these are even more critical in helping me thrive in my job than professional knowledge.*"

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Overall Evaluation of Higher Education Experiences and Unfulfilled Expectation

When Tobey graduated from the university, she held three offers from the renowned companies in the hi-tech field. She did not have a job-less transition time between graduation and her first day of work, although she did spend some weeks traveling to foreign countries before starting her job as a celebration of a new page in her life. Obviously, these offer letters tell how sought-after she was in the job market. When asked about what she thought how her employability was built, Tobey was not confident as I expected. She stated, "*To be honest, I really don't know whether I could get a job when I was sending out my resume. I did work hard in school. However, I can't tell people that I had a certain set of skills that could be immediately used in their company.*"

Lack of Touch-points with the Industry

Tobey's current position as operation consultant required her to flexibly be involved in many projects with different client companies supporting software development and application (App) creation. *"Recently I am developing a customer service Chat Robot for a website, which is now used by more and more commercial websites,*" she said. Tobey indicated that, skills needed for leading the new trend, creating Apps or "service robots" for websites, were not even invented when she was studying in college. In fact, most of the faculty in the university program did not have experience or an industrial background for these skills either. *"I think the basic, theoretical knowledge from the courses I took did help me to do well on my job. But to be honest, what I am currently doing is totally new to me, nothing like what I had been doing in college,*" Tobey said.

As Tobey noted, the gap between curriculum and the industry is an obvious fact. At the moment of graduating from university, Tobey felt a strong sense of panic, mainly due to the huge knowledge and practice gap between campus and industry. *"Probably the school was already*

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trying to mend the gap... There was a session I attended when I was in college that I thought was useful. The program invited some people from the industry to introduce how new technologies are being used in the industry. However, that was a one-time touch point. I wish there were more similar connections in the regular courses that would engage us with the new trends and needed skills in the industry. I do think this gap needs to be mindfully mended," she said.

Communication Skills

The gap was not only about the lack of skills set expected by the job market. *"I spent a huge amount of time and energy trying to adapt to the workplace culture that totally blew my mind,"* Tobey shared. She knew communication skills, presentation skills, and a positive attitude were important before she entered the job market. What she did not expect was the level of complication regarding communication with her supervisor and the management. *"I am very inexperienced in communicating with people who are older and have authority over me. Back on campus, probably the most similar experience was my communication with professors. They were in charge of my grades, yet most of them had specific expectation and criteria that I could follow. But I feel supervisors in the workplace are very different from professors. I feel that they hold great expectations over employees, with very vague criteria, which sometimes really makes me crazy,"* she complained. While Tobey did not think the situation could be precisely prepared in higher education experiences, it still merited attention for graduating students so they could be aware, and learn about available resources.

Decision Making Ability

Related to communication, for Tobey, there is another gap between the workplace and campus: the decision making ability. She said. *"After working for two years, I realized that my previous education did not equip me with the ability for independent decision making."*

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In her company, Tobey thinks that her supervisor expects her more than the completion of an assigned job. She remembered that there were times that her supervisor would give her the flexibility and freedom to create her own project. This type of opportunity actually brought her something more than excitement. *"At first, I was clueless of what I WANTED to do. It was always like people telling me what to do. It took me some time to come up with the courage to find out and tell people about what I want,"* she reflected. Tobey was reminded of her blind spot when she got the chance to work with colleagues from other countries. *"We might have strong skills to solve problems, but my colleagues from the United States was clear about what they wanted and have great communication skills to persuade me to accept their ideas."*

Tobey's experience made me think of a previous conversation I had with a friend who received her college education in the United States after she completed high school in Taiwan. She felt totally lost when receiving her first college assignment as her professor asked her to write an argumentative essay on a certain topic. While almost all of her classmates were so familiar with the terms like statement, supporting claims, rebuttals, etc., all of these concepts were brand new to her. In the Taiwanese education system, students do not have many opportunities to form an "argument." The grading system mostly depends on knowledge recitation and calculations over problems. My friend's experience partly represents how Taiwanese students lack the cultivation processes to make a sound argument, or the ability to explain his or her idea explicitly.

In Asian culture, students, like children, are expected to be obedient and follow instructions without questioning the authorities. Most of the time, students are expected to merely fulfill task requirements. From kindergarten to university, there are few opportunities for students to ask questions and receive answers, or engage in classroom discussions. As a result,

many students lack necessary critical thinking, reasoning and presentation skills when they step into the world of work.

Prioritization and Setting Boundaries

There is another aspect of communication skills that Tobey thinks is not covered by her higher education experience: the skill to say no. *"It took me more than one year to realize that I needed to say no to some requests to ensure that I can stay focused and be efficiently productive. Honestly speaking, it is still very hard for me."* The point Tobey indicated actually involves boundary setting, especially when it comes to dealing with people of power and authority. *"Being a new employee in the company, sometimes I feel like I need to prove my adaptability by being super nice or helpful. Well, in some sense, I believe my supervisor expects that from me as well. But it is impossible to take all requests and remain efficient or focused. Learning to set up appropriate boundaries, and ensuring that I am on track for keeping the right prioritization is hard, but it is extremely important if I want to be professional,"* Tobey reflected. To Tobey, being professional means more than demonstrating skills that are irreplaceable. Professionalism also demands a high level of independence, and the ability to prioritize among numerous tasks.

As we talked about how higher education can help students build confidence to say no, Tobey said, *"Actually I don't know if regular curriculum can do this. Maybe student organization and other leadership opportunities will do better on this part. I think it really involves how college students are viewed and expected in the community."* Tobey continued to clarify by explaining that many people do not see college students, or even college graduates, as independent grownups that are capable of making mature decisions. As a result, college graduates are expected to follow instructions, but not to express their ideas or establish their own priorities.

Career Transition Support

When Tobey looked back to the stage when she was deciding what was next after college, Tobey did not remember receiving much information and support from the program, faculty members, or campus career services. Instead, she sought information from her personal networks. *"I posted my panic over career transition on social media. Some of my friends saw my posts and reached out to me. I felt much better after I talked to them."* Tobey's coping strategy in the moment when she encountered career transition difficulty is common among college students. Only less than 10 percent of Taiwanese college students seek career counseling service at the time for career choices. Tobey discussed her situation with some of the recent graduates who were already in the graduate school programs or working in the industry. Many friends recommended that she should go into the job market first to see what she really wanted to do. Thus, she decided she would go straight to work after graduation.

Tobey said. *"I know that some of my friends did go to their advisors. Well, that might help; but I did not really think that my advisor knew me well enough to offer me constructive advice."* Most college programs in Taiwan assign cohort advisors to college students. However, the relationship between advisors and students is distant in most cases. Traditionally, the Chinese educational system is shaped by teacher-centeredness, meaning that the teacher directs and controls the design of the overall educational objective and the educational process. Chinese students tend to respect teachers more, and the weight of respect at times enlarges the distance between students and faculty members. In current Taiwanese universities, advisors would hold a lunch meeting, with department-supported funding, and chat with their students once a year. Although students are informed or encouraged to go to their advisors with any questions or concerns, most students would not go. It is the culture of the campus; students are not used to seeking help from their advisors or the counseling centers unless they are required. The issue

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does not exist only on the students' end; with heavy research and service responsibilities, faculty members who are assigned as advisors are not given enough time and resources to support students' career counseling needs. Furthermore, most of the faculty members did not receive career counseling support from their previous higher education experiences as well. Thus, it is a challenge to expect university faculty members to offer appropriate counseling support for students due to their own respective lack of personal experience and professional support.

Overall Evaluation of Higher Education Experience and Unfulfilled Expectation

In regards to the most important value of higher education, Tobey said, *"I believe the main purpose of higher education should be to help a young person become professional and independent, independent with logical thinking and critical thinking skills, and a clear vision about one's future."* For her, university should not only prepare students to be future employees for industrial companies, but also cultivate responsible and mature professionals.

Furthermore, Tobey also sees college years as a critical phase for multi-faceted learning and career exploration. She said, *"I personally benefited from the diverse courses and learning opportunities offered by the university that allowed me to be engaged in areas that I had never been before."* Tobey thinks that young people during their college years need flexibility and opportunities to explore various academic, professional, and social engagement opportunities to realize what their passion and strengths really are. The university should prepare a welcoming learning environment for students that are willing to explore different possibilities. She said:

> *I think the problem is that most of the college students really don't know, and don't really care, what they want for life. Many of the students do not think about life after campus until senior years, and it is definitely too late. If they take the opportunity to explore*

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different career paths through various courses or student organizations, it will surely be

easier for students to make career decisions.

Furthermore, Tobey also mentioned that it is actually a little late to think about career and what one wants to do for the future while in college. Career exploration should be more emphasized in the high school stage, before students make decisions on their college majors. Generally speaking, Taiwanese students are not expected to demonstrate independence on decision making until late in life, and similar on career transition decisions.

Moreover, Tobey believes that there should be a "higher purpose." She indicated that sometimes universities are very busy thinking about preparing skills needed for the job market; however, life after campus is not only about work. The whole being of a person – mental, physical and spiritually – should be addressed. "*There is something missing in my college experiences regarding a university helping college student cultivate the wholeness of life in a positive and considerate way,*" she said. She thinks it is important that higher education think more holistically about students' development. Tobey took a few courses from the psychology department in college. For her, those courses enabled her to be aware of how her past experiences shaped her to who she is now. The course content also guided her to explore her inner state, and help her learned to reach a balanced state in her busy life. Additionally, she also regularly attends Christian church gatherings. She reflected that, *"The engagement with mental health status and my spiritual journey seem to be irrelevant to my professional life. However, I feel like that is even more related to who I am and the wholeness of my life."*

Lastly, I asked Tobey what advice she would have for current college students. She thought for a while, and slowly answered,

I would suggest college students to spend more time and energy on extra-curricular activities, like student organizations and volunteering, in the first two years. I feel like that would open a person's eyes and provide opportunities for leadership training and build meaningful relationships that may last for a long time. After junior year, I think internship is a must if he/she wants to be preparing him/herself for the job market. For me, internship was one of the most critical reasons that I am working in my current company. Employers value internships more than students would think.

A few months after the interview, Tobey told me that she got admission from UC Berkeley for the master's program in computer science engineering. Compared to other fresh college graduates, Tobey's wage is pretty high. Starting from NT$50,000 (US$1,666) for the first three months, her monthly wage jumped to NT$96,000 (US$3,200) in two years. Comparing to many recent graduates, Tobey belongs to the high-income group. She has a better chance of purchasing her own car, house, and maintaining a decent life with her wage. And if she wishes, she could easily apply for graduate school in Taiwan for further education. Reasonably, it is not the financial pressure that pushes her for big change. The reason she chose not to continue pursuing an advanced degree in Taiwan was because of the lack of promising vision of the future, and, *"I feel like I need to go out and know what's going on in the world. And honestly, the pay and work culture in Taiwan are unwelcoming and unfriendly to young people. I want a chance; a chance to prove my ability, and see how far I can go."* Young people like Tobey, who can definitely contribute to Taiwanese society, feel that they "need" to leave the island to find their future. This is the battle facing Taiwan everyday - brain drain because young talent faces an unfriendly environment. Tobey is not the first one to leave nor will she be the last one Taiwan loses if the environment does not change.

CASE THREE: GORDON WU

Gordon graduated from the mechanical engineering department of a public university in Keelung City, an ocean-side city in Northern Taiwan. Keelung was once the most important port in Taiwan two decades ago. Fishery, shipbuilding, and food manufacturing served as important sources of the economy for the city. However, with shifts in the industry, the recent economic downturn, and local brain drain to other growing metropolitan areas, Keelung is suffering from negative population growth and weak economic development. The university Gordon attended was established in the 1950s, as one of Taiwan's maritime technology college. With its geographic proximity to the East China Sea, the university specializes in maritime science, ocean science, ocean law and policy, as well as other related shipbuilding mechanical field, with the coordination of resources and local industries. However, like the city, the university is now striving to transform itself to a general university that leaves the maritime specialty behind.

After Gordon graduated from college, he served 18 months as a research assistant in a federal government research institution to fulfill the alternative compulsory military requirement. Before the term ended, the same office offered him an official position, so he continued to work there as an assistant research-development engineer starting in 2016. Basically, this position is the extension of his previous position. The main duties include project development and providing research assistance to the main research investigator. He looks up and shares the newest journal articles with the team, contributes research ideas, and assists with ongoing research projects.

College Experiences that Enhance Employability

When we started talked about his overall employability building perception through his college experiences, he first seemed to be a little puzzled. *"To be honest, at the moment I graduated from college, I did not believe that I was ready for anything,"* he said. For him, four years in the university did not really prepare him well for life after campus. *"The only leverage I had at that moment was probably my social network,"* he said. Thus, I kept on explaining more about the concept of employability, referring to the attribute, resources and skill sets that could help him succeed in the job market. He pondered for a while, and started talking again.

Faculty Interaction

When Gordon reflected on his college experiences, such as the curriculum, several part-time jobs, student organization involvement, and others, he considered the encounter with Professor Chen as the most significant incident that helps him build employability. *"I would think the turning point of my career is getting to know Professor Chen."*

In Gordon's program, all students needed to choose two concentrations out of five categories as their specialties, and then pick out courses related to the chosen specialties. Gordon chose design engineering and solid mechanics. However, the course he thinks as the most important one was welding, which is actually outside of his chosen specialty. *"I took it in junior year, and that was when I met Professor Chen. He has been mentoring me since then,"* he said.

In-depth connection with the industry

Gordon appreciates Professor Chen's strong background in the industry and the way he connects theories and industrial practices in his class. *"He does a lot of industry-university cooperative research project. In his class, he often shares real world cases he has been involved with, like the Taipei Metro and other projects. He would talk about what problems he*

encountered with and how their team overcame these problems," he said. Professor Chen is an adjunct professor, who has many consultant projects with local industries. Gordon remembers that in class, Professor Chen gave many real-world examples and situations in the industry, and asked students to discuss possible solutions. Compared to other courses that only deal with textbooks and tests, Professor Chen brought the industry into the classroom. He would arrange frequent field trips to the port, local factories and companies, and ship construction sites. Gordon said, "*I think he is smart enough to use the university's unique location. Well, for me it did effectively inspire my interests in this field.*"

Effective teaching

The other reason Gordon appreciated knowing Professor Chen was because of the way he organized and managed his class and assignments.

> *Well, he is actually pretty strict regarding the course requirement, especially toward the level of completion of assignments. To do well on his assignments, you have to spend extra time looking for resources and information, and make sure that you clearly understand the main concepts. I liked the projects that are not purely testing you about the theories or knowledge. I did pretty well on these projects. And this encouraged me a lot. I think that's also part of the reason that inspires me to work in this field now.*

For Gordon, among over fifty courses he took in college, the courses that left strong impressions upon him often had something to do with practical implications in industry or hands-on experiences.

Personal connection and career guidance

The reason Gordon got his current job was also due to the professor's strong recommendation and personal network. Interestingly, Professor Chen takes securing students'

job as one of his prioritized goals as their advisor. *"I am very lucky to meet a great mentor who really cares about me. Without Professor Chen's guidance, career transition may be much more difficult for me,"* he shared. At the time I met Gordon, he was preparing to apply for graduate school. Interaction with this professor had ignited his interest and passion in this field, guided him to the research engagement with the lab, and inspired him to pursue higher degrees in the field.

Connection With the Industry

Gordon's current position is the assistant research engineer in a government laboratory. The project he is currently involved with closely relates to his laboratory projects with Professor Chen that began in his junior year. Two years of laboratory participation provided him with exceptional knowledge and practical skills that he now brings to his job. The experience was also the key factor that enabled him to approach the alternative compulsory military service opportunity as an assistant researcher in the office he currently works for.

Gordon thinks that his engagement with the lab during his college years was one of the main reasons for his smooth career transition. *"I think the industry values hands-on experiences. I was lucky to join Professor Chen's lab in my junior year. Most of my classmates did not choose to do lab projects. I think that made a huge difference in my resume,"* he said.

Extracurricular Activities Engagement

He was engaged in the university table tennis team for three years, and he was even selected as the team captain in his senior year. He was also actively involved in the department softball and basketball team. He said, *"Well, this was not in my plan, but it turned out to be very enriching."*

Social network

Gordon reflected that constant engagement with the table tennis team built up a strong bond between team members. When Gordon needed career advice or information of the job market, the senior members of the sport teams were the ones he asked for advice first. *"I think the relationship I have with them (sport team members) means a lot to me, especially when I don't receive much support from the school regarding career counseling and stuff like that."* In fact, Gordon considers the social network he had as his strongest perceived employability built through college experiences.

Leadership opportunity

Gordon was the team captain for both the university and department table tennis teams. *"Being a leader is a challenge. I appreciate the opportunity to make me an accountable leader,"* he said. Besides event coordination and organization skills, the most valuable lesson he learned through the leadership was the capability to create an atmosphere that encouraged each member to contribute their time and talent. *"Teamwork is important. My position required me to work closely with my team members, I've realized that those 'practices' I had in college really prepared me well,"* he reflected. Overall, Gordon considers student organization involvement as one of the most enriching experience in his college experience.

Besides table tennis team, Gordon had other commitments outside the classroom. He had a part-time job as a waiter at a local restaurant for two years, and actively participated in a college student fellowship in a Christian church.

Christian student fellowship

When Gordon talked about his engagement with the Christian fellowship he was deeply involved in, I could feel his delight and sense of belonging towards the group. *"I think I have*

changed a lot through my journey of faith," he said. First of all, he thinks his Christian faith has

helped him shape a different attitude towards challenges that he has encountered in his life.

"When I was in college, I was constantly asking questions regarding who I was and who I should

be. That is a journey of searching for my identity and my place in the world. It happened at the

right time, I think, in college, when I was free to explore different possibilities," he said. Besides,

the friendships he gained through the Christian fellowship also brought a lot of encouragement

for him. He said, "*The fellowship and the intimate relationship really support tremendously*

when I am in my own battle."

In addition, when he participates in the service projects with the church, he worked with

coworkers from all ages. *"It is very different from university campus. In the church, I not only*

get the chance to work with students like me, but also with young adults, professionals, seniors,

and also people with very different backgrounds from me. It is interesting, and also profound to

learn to get along with different people. For me, it is an important cultivation process enabling

me to work with my current colleagues who come from various backgrounds."

Part-time job

During his college years, Gordon worked part-time as a waiter in a big restaurant for two

years. Gordon's intention for working part-time was to support himself so that he would not need

to rely on his parents for financial support. *"They were already paying my tuition. I wanted to*

lessen their burden," he said. Waiters in Taiwan only receive minimum wage, and shift hours are

usually long with an intensive workload. For Gordon, that was an opportunity that permitted him

to "see what real world is like beyond school." He thinks the customer service skills acquired

from this job has helped improving his people skills, and ability to deal with hardships.

Needed Employability in the Workplace

Professional Knowledge and Research Ability

Working in an academic research institution, Gordon's current position as the assistant research and development engineer requires him to frequently use the research skills and professional knowledge that he had obtained in college. "*The most critical qualification for the position is the research ability and the passion for science. I think my previous training in Professor Chen's lab was the important foundation that pushed me to where I am and what I do now. I was able to accumulate the knowledge and techniques that were learned in the lab, and bring that to the research that I am conducting now,*" he said.

Gordon also indicated that English proficiency was an important factor that helped him to get his current position. He passed the intermediate level of The General English Proficiency Test (GEPT) when he was applying for the position. *"I did not know how much my supervisors emphasized English ability until I started working here. They told me that an important factor that got me in the institution was the GEPT certificate I earned,"* he said. Indeed, English proficiency, especially in reading and writing, is required to use academic research databases, communicate with international scholars, and write international journal articles. Besides the institution where Gordon works, many academic institutions in Taiwan have begun to list English proficiency, particularly the ability to teach courses in English, as an important criterion when hiring new faculty and research members.

Communication Skills

Other than professional knowledge, Gordon pointed to the importance of communication skills in the office. *"I think academic institutions are relatively less complicated than other businesses; however, I realized that my job is really only about research and paper. In fact, it is*

more about working with people." he reflected. Gordon thinks communication skills basically determine the smoothness and effectiveness of a professional. Adequate communication skills are necessary to facilitate positive relationship between colleagues, and make collaborations between corporations possible. *"Knowledge and skills are certainly important; but to thrive in workplace, it is actually more about relationships,"* he said.

Presentation Skills

Related to people skills, Gordon mentioned that his presentation skills are second-rate and is something he is currently working hard to improve. He remembered, *"In my college program, we did not have many opportunities to present our ideas. I think it is a shame. For me, it is a skill that I need to use every day at work. It is kind of late to build my presentation skills now, but I am working hard to making it up."*

Character Matters

Gordon became aware of the impact of good characters after he stepped into the workplace. Gordon remembered that some of his colleagues had problems getting along with other staff, and it brought some hard time in the office. He shared,

> *There are two other recent graduates beside me in the same office as mine, and both of them graduated from top universities. However, the senior staff and my supervisors are disappointed about them. Not because of they lack of professional abilities; with their brand-name degrees, they are actually better trained than I am. The disappointment is due to their reluctant attitude to learn, and lack of good characters. I was actually very surprised to hear them say that, because I thought employers love graduates from prestigious universities. Finally, I realized that good character traits like integrity,*

honesty, responsibility, etc. are sometimes more critical than professional skills in the

workplace.

Beside, Gordon thinks a college graduate should be mature enough to "get along with people." However, it is also a fact that this is apparently an unrealistic expectation of many employers. *"My supervisor once said to me that he was relieved to see me getting along well with other staff, because it does not happen most of the time,"* he said.

Overall Evaluation of Higher Education Experiences and Unfulfilled Expectation

When asked about how satisfied he **was** about his college experience, Gordon said, *"Generally, I don't think my higher education experience was as good as I expected,"* Gordon said. The disappointment toward college education **arose** from the unfulfilled expectation toward higher education, and the perceived skill gap after he went into the job market. Resources for Career Transition

One of Gordon's biggest fear before graduation was not knowing what he could do after college. *"Except for Professor Chen, I did not remember any other career advice resources or support from the university. At the moment I graduated, I actually had no idea what I was going to do. I do not think there are resources out there on campus that even tried to reach to me,"* he said. He chose mechanical engineering as his major, and was expecting to see how knowledge and skills in mechanical engineering are utilized in the industry. However, throughout his four years of college, except for Professor Chen's and another instructor's courses, he did not really know what his potential career paths would be like. The university career counseling services never reached out to him when he was wondering where to go for his next step. *"The big problem is that most of us (he and his college cohort) do not really know what we want, and*

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what our expertise really are. If there were services that could have helped us figure out who we are, what we are capable of doing, or even better, some networking events, the transition would have been much easier for us. However, there were none. We literally were on our own," he reflected.

The Value of Higher Education

Then we talked about what he thought should be the most important value of higher education. Gordon thought for a while and said, "*I think the goal of higher education is to equip college students with abilities to solve problems in the workplace and in the community. Well, for me, I don't think I reached that goal at the moment I left campus.*" As he said earlier in the interview, he still felt a great sense of uncertainty when it was time to start a new career. Ironically, he was actually offered a position in the field he had plenty of lab experiences; still, he did not believe that he was ready. For him, higher education might have provided him with some level of skills, but the sense of professionalism and confidence were missing from the cultivation process.

He continued to state:

Well, after I started my career, I met so many different people in my job. Many of them did not have college degrees, but are doing fantastic in what they are doing. This actually made me rethink of my trajectory choice. Maybe I should have gone for the vocational school track, learn a skill, and skip the whole college stuff. Well, I know I wouldn't be able to do that, because my parents wouldn't allow me. They still think college is the only choice for me to get a good position in the future."

Gordon's thoughts of "the road untaken" and the prediction of his parents' response reveal the traditional stereotype of an "ideal career." Many parents who grew up with a working-

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class background put hope on the next generation to advance to the white-collar class. Getting a university degree is an essential element toward the goal. However, universalized higher education in Taiwan and the economic plight have brought about the devaluation of university degrees, and even college students and the degree receivers are skeptical of the value of higher education.

Gordon's overall experience points out the impact of an influential advisor, and how that influence can have a ripple effect on students' career transition. Moreover, the quality and pedagogy core courses that are taught critically affect students learning motivation and outcome.

CROSS-CASE DISCUSSION:

In order to obtain the abilities required by STEM industry and research, graduates are expected to think independently, learn actively, and explore new learning areas and methods. This would then enable graduates to conduct frontier research and projects independently. Compared to other disciplines, STEM field graduates have more opportunities to put what they've learned in university classrooms into workplace practice. Employable attributes and skills that help STEM field graduates stand out include professional knowledge and skill sets, and "soft-skills" developed through extracurricular experiences including student organization engagement, part-time job and other activities. Moreover, internships are perceived by the graduates as experiences that are highly valued by their employers.

Significant Employable Attributes Needed In The Field

Professional knowledge and skills

The STEM field is a professional field with fast-advancing technologies and knowledge. Many companies in Taiwan select their ideal candidate first by giving a written test regarding the theory, knowledge and essential skills to satisfy position requirements. The successful candidates are expected to demonstrate sufficient expertise to illustrate their knowledge and skills, especially in fields that heavily rely on specific technological skill set,

In regards to skills, employers value matching techniques and skill sets that correspond with the industry's current trend. Additionally, Taiwanese companies overall are decreasing the number of training programs for newly hired employees. As a result, demonstrating sufficient knowledge and experiences that can prove a potential employee's ability to satisfy a job description are appraised highly in the hiring process.

One hard truth is that degrees from prestigious universities are still looked upon favorably by employers, particularly at the human resource department-screening phase. For large international companies, brand-name university graduates usually are more likely to be granted the 'admission ticket' to the candidate lists. Graduates from lower-end private universities either need to be referred internally, or to have impressive resumes to compete with graduates of top-tier universities. Given the situation, internships are great investments to future career building, especially for graduates from less-prestigious universities.

Faculty interaction

High-quality relationships with a mentor or advisor can significantly improve a graduates' transition into the workplace. Transition from college student to work life can be exciting, but simultaneously challenging to new graduates. Lack of information and support from the universities results in uncertainty and panic for seniors and recent graduates. An influential mentor who shows personal care and provides counseling opportunities, as well as information and advice about career options, can help young graduates figure out plans for the next step. Advisors who have strong connections with industry or other academic organizations are particularly more likely to provide substantial referrals and recommendations that can support new graduates in their job search.

Innovative ability and problem solving skills

The STEM field heavily emphasize innovation and creativity. Industrial companies are looking for talented persons who are fast and smart with the potential to make breakthroughs. Traditional employable attributes like amenability and compatibility are no longer enough. Employers are looking for potential employees with critical thinking skills, problem solving abilities, ability to work in a team, and innovative thinking for the fast changing industry.

Communication and people skills

Given the project-based nature of the STEM fieldwork, teamwork ability is heavily emphasized as a quality of competence. All three participants stated the importance of people skills and communication. Success in the workplace is not a one-person show; instead, personal qualities and collaboration skills that stimulate productivity and creativity are welcome in the working world.

Unfulfilled Expectation

However, through these three cases, even for graduates that are suited to the matching industry, there are still transition bumps that needed to be dealt with.

Critical thinking skill and decision making ability

As mentioned above, all participants mentioned the importance of critical thinking skills; however, this is also an area that recent graduates perceived themselves to be deficient. In the typical Asian educational environment, students are expected to recite, practice and repeat standard answers, especially in basic education stages. When students enter higher education institutions, their mindsets are rather rigid. It takes considerable effort and time to initiate an innovative and creative-thinking habit. Simply put, Taiwanese college students are well trained to replicate standard answers, but lack the curiosity to challenge widely accepted answers. The lack of critical thinking can devastatingly hinder the potential for graduates to actively participate and contribute to an industry targeting on technology innovation and problem solving.

Moreover, Taiwanese college students are more likely to be dependent on their families in regards to their career decision-making process, and maintain their financial dependence on their parents. Unlike western culture, many traditional Taiwanese parents only consider their

children as independent adults when they are married. At some level, recent college graduates have also looked upon themselves in the same lens. The lack of confidence and sense of dependence further result in graduates' hesitation to speak their ideas, especially when interacting with senior staff or supervisors. This rookie mindset creates challenges for recent graduates to effectively communicate with their supervisors and other colleagues.

Up-to-date skills and knowledge

In the STEM industry field, frontier innovations are often presented by industrial companies, as often as by academic organizations. For universities, keeping up with the latest technology is always the ultimate goal but is still a challenge. All research participants mentioned the gap between the college classroom and the needs of their respective industries. The actual problem may not lie with the innovations that are introduced in the classroom, but the way college curriculums are laid out for college students. Many graduates talked about the void between knowledge and theories they learned in college and what was needed in their work environment. Although many universities are trying to close this gap, additional effort is needed to meet students' (and employers') expectations.

Career coaching resources

Related to the gap between classroom and workplace, many graduates experienced the transition to workplace on an "unpaved road". For at least these three participants, career transition information sources generally were from their personal connections instead of campus resources. They might be aware of 'the possibility of the existence of such service', but still choose to fight the battle with their own resources. Their underutilization of career counseling services (or, perhaps, the limited availability of such services) was a significant challenge for their employability and transition quality.

Constructive Ways for Cultivating Employability in the STEM field

      Curriculum that facilitate active learning

Despite the curriculum content, the way courses are taught makes a huge difference. Courses that have a positive impact on students are the ones that actively involve students in project design, problem solving, and teamwork. Theoretical-based courses that build up basic knowledge and skills are important; however, it is the pedagogy instructors use that determines the quality of the learning outcome. A feasible way to start critical thinking and innovative thinking habit at the university level is to promote project-based learning opportunities that leave the active learning process to the learner - the college students, instead of the instructors. It is best operated in a teamwork format. Courses from various disciplines, and not just tech-based core courses, can encourage students to practice demonstrating their own ideas, forming arguments, and giving presentations with clear, logical reasoning.

      Internship engagement

Furthermore, internships also play a big role in employability building. Graduates share profound experiences with their internships in corporations in their professional field. They also recognize that the on-site experience offers knowledge, skills, and the 'sense' that could not be built in classrooms. When higher education collaborates with industries, students benefit from both the academic institutions through theories and knowledge building, and industrial corporations for the on-site knowledge and up-to-date skills. Not only do students benefit from such collaborations, companies are also able to reach out to potential employees at low cost and risk.

Engagement in extracurricular activities

In addition, extracurricular activities can significantly help college students improve their social and communication skills, at times more than in classrooms. Universities should encourage college students to engage in student organizations and take leadership roles as these experiences serve as preludes to the office environment and development of personal and professional relationship management.

Robust advising and career coaching system

College students and recent graduates are in great need of advising resources with regards to identifying their strengths and interests, career trajectories, job opportunities, and other transition-related issues, including their mental and spiritual wellbeing. Current department advising system does not effectively capture and respond to graduating students' urgent needs. As the participants said, starting to plan for career just before graduation is often too late. Given the fact that Taiwanese college students tend to keep their career uncertainty to themselves instead of seeking help from professionals or experienced advisors, university departments should consider how to provide a blend of programs that offer introductions to career options and identification of career interests, and productive approaches to promote existing career counseling services. As many university centers are experiencing a shortage of staff and funding, universities should prioritize career-counseling services to elevate college students' employability and help graduates fulfill their potential.

STEM Field Employability Building in the Globalization Context

In the past two decades, the development of the STEM industry has driven Taiwan's national development. For a region like Taiwan with extremely limited natural resources, the development of science and technology is particularly crucial. Beyond continuing to rely on the

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strengths of the information and communications industry, Taiwanese authorities have also taken active measures to develop green energy and smart living technology, strengthen biotech medicine and disaster mitigation and response research and development, and promote dialogue between technology and humanities aiming at transforming Taiwan into a global leader in green energy technology and intelligent living (NSC, 2009, 2010). Taiwan's electronics industry has been a pillar of its prosperity for the past four decades, turning the island into a key supplier for the likes of Apple, IBM and Dell. Yet rising global competition, especially the fast growing economy of China, is increasingly challenging Taiwan. The Taiwanese government needs to come up with effective strategies to sustain Taiwan's economic lifeline by supporting the breeding line of needed talents with a more robust, sustainable nurturing plan.

Chapter Six:

The Health and Human Service Professional Field Graduates' Experiences

Introduction

In 1995 Taiwan adopted a national health insurance system. It is a government-administered insurance-based national healthcare system. Since then, Taiwan's demand for healthcare and human service professionals continues to grow steadily. Additionally, Taiwan has a fast-aging population that will increase demand and opportunities for long-term care and related services in the long run. Generally graduates from the medical, health-related professions earn the highest starting wage among all disciplines. As a result, the demand for healthcare and human service professionals is reflected in the enrollment number present in the field. More than 150 thousands students are enrolled in medical, health and social service majors every year, which accounts for more than 12 percent of the total higher education student enrollment (2017, MOE).

In this chapter, three graduates from the health profession and social service fields are invited to share their career transition experiences. Chuck graduated from the medical laboratory science and biotechnology department from a private medical university in central Taiwan; he works as a medical technologist in a private clinical laboratory. Sue graduated with double degrees of nursing and gerontology health management from a medical university in Taipei. She is now a registered nurse in a local hospital. Lastly, Yvonne obtained her social work degree from a privileged university in Taipei, and is currently working as a social worker in a local hospital. I purposely exclude medical students (new medical doctors) in the research because of its unique program design that includes five-year study on campus and two additional years of

residency in the hospitals. Their career development experiences are quite different from typical

four-year academic programs, and are further investigated in another project.

CASE ONE: CHUCK TSAI

Chuck Tsai graduated from a medical university in Taichung City, the central part of the small island of Taiwan. The department he enrolled in was medical laboratory science and biotechnology, which mainly trains laboratory scientists, medical technologists and researchers in biomedicine field. Currently Chuck works as a medical technologist in a private clinical laboratory in Chia-Yi City, his hometown in the southern part of Taiwan. This is actually Chuck's second job. After he graduated from the university with a board-certified medical technologist certification, his first appointment was as a medical technologist in a regional hospital. After working there for a year, he decided to apply for his current position in the private medical laboratory.

The reason he decided to move on from his first appointment was because of the demanding works hours in the hospital environment. He said, *"I typically work 10 hours a day, with only 30 minutes to break for lunch. Plus the high risk of infection, I realized that I will not be happy here in three years. That's why I started to think about looking for positions in a non-hospital environment."* He was pleased about the change. His current position with the same title in a local medical laboratory requires normal 40 hours per week with a more flexible schedule; and it pays more than the hospital. *"Like most people, I care about my quality of life. Working long hours left me no time and energy for things that I still want to be engaged with in addition to my professional life. I know many people would think of a medical technologist in a hospital as a 'better fit' in my field; but for me, being able to have control over my time and quality of life is equally important,"* he said.

For Chuck, there was no tough career transition gap since he graduated from university. Professionals with medical examination skills are greatly needed in southern Taiwan. After sending out his first job application for two weeks, he was on the first day of his first formal job. With the advanced development of Taiwanese medical insurances, the medical-related profession is always in strong demand especially in the non-metropolitan areas.

Career Trajectory and Academic Background

Interestingly, Chuck did not 'plan' to go into this field before his first day of college. He studied in the Group III specification in high school, which means in addition to the general subjects including Mandarin, English and mathematics, he also needed to take physics, chemistry and biology, but was exempt from history and geography. (Unlike the United States education system, the aforementioned subjects are about all the main courses offered in Taiwanese high schools). Chuck's first priority was computer engineering and performance art majors. However, his test scores were not good enough for the computer science department at the university he wished to attend. Additionally, Chuck's parents were worried about the future development of art-related fields. As for the reason he put the department of laboratory science and biomedicine on his wish list, he thought the program taught forensic science knowledge and skills. Without gaining further knowledge about the department, he applied anyway and was admitted. In the first week of school, he realized *"this is nothing like the CSI TV series as I expected,"* he laughed as he explained the misunderstanding that leads him into the profession. *"The first week of class was full of surprises for me, academically especially. That was the moment that I really got to know what the program was about. I have to admit I was a bit surprised - or a lot surprised,"* he said.

Biotechnology is a fast-growing business in Taiwan. The department Chuck enrolled in covers both fields of laboratory medicine and biomedical biotechnology; the combination of expertise is very competitive in the current Taiwanese job market. *"I guess this is a lucky mistake for me,"* he reflected.

"If I was offered more resources to explore what various majors and departments were about, I guess the transition might have been much smoother,' he said. The situation was because a direct result of the college entrance system in Taiwan. Chuck took the College Entrance Examination in Specified Subject (ACCESS) in July, which is actually the second round of College Entrance Exams for students to take if they are not satisfied with the test scores from the first round; (the College Entrance Examination in Subject Competence, or CEESC) students do not want to apply for earlier admission through recommended admission tracks. After the early July examination, Chuck learned about his test in late July and had only two weeks to fill out a wish list card of what university departments he wanted to attend. In other words, after working hard for all those years in school, Chuck had only two short weeks to decide the career path that he would be pursuing in the next few decades of his life. Many Taiwanese high school graduates make hasty decisions toward their future career without sufficient information; Chuck was one of them, but he was a lucky one.

College Experiences that Enhance Employability

Although Chuck started his college experience with a bit of surprise, overall he had rich and positive experiences in his four years of college. When I posed to him the question regarding how he perceives the employability he possesses, and how they are related to his past college experiences, he thought for a couple of seconds and answered, *"Certificate, professional skills,*

and the ability to communicate and work with other people." Slowly, he examined how various college experiences enhanced his perceived employability.

Student Organization Engagement

Event planning

Initially Chuck was in the university's table tennis club. They meet once a week to practice table tennis. Actually he did not spend very much time and energy in the club because since the sophomore year, he was invited to take a position in the Student Association of the medical technology department. He was involved in the secretary department, mainly collecting and organizing data related to the association activities. Every year, the association holds big research and social events for the department students that require the full participation of the whole leadership team. *"I was involved in so many event planning meetings that lasted to late nights, even overnight. I think the opportunity to be involved in event planning, marketing and implementation is definitely precious and important for college students. You get the chance to build up this kind of skill through engagement like this,"* he reflected.

Leadership opportunity

Chuck also perceived his involvement in the department's student organization as an important booster in building his general leadership abilities. *"I am more like a shy person in a group, so I did not have much experience with leadership. I would think the opportunity to participate in the planning and implementing of huge events like those kind of puts me out of my comfort zone, and gives me the necessary engagement with this stuff,"* he said. What Chuck was trying to express is that, although he did not consider himself as the 'typical leader-type of person' he got rich leadership experiences through taking part in the student association

activities. The skills and abilities he learned through the in-depth engagement eventually contributed to enhancing his administrative abilities at work and adequate people skills to handle relationships in workplace.

Social network

Other than event planning skills and leadership training opportunities, the most valuable asset Chuck gained through his two-year involvement with the association is the strong friendship and social network that was built through constant engagement. *"I value their friendship and support through the years. We had been through a lot together, that was really important and a great memory for me. Besides, I feel like the career advice and guidance from the seniors impacted my career decision significantly. Without their advice and sharing, I probably would feel lost in choosing what to do after graduation,"* he reflected. As Chuck mentioned, instead of seeking help from professional career counselors or faculty, most Taiwanese college students use their personal social network to get career advice and information. For him, student organization played an important role in connecting him with the future world in an unexpected way.

Professional Courses That Build Up Knowledge and Skills

The medical technology field is highly skill oriented. In the university, Chuck was exposed to extensive theoretical and practical training courses in the four-year program. The first year, students build up foundational knowledge and theories in chemistry, biology, cell biology, etc. The courses stress the importance of depth and width in sophomore year by emphasizing the foundational medical bases on immunology, parasitology, anatomy, histology, physiology, etc. Most of these courses come with tests and quizzes once or twice a month. For juniors, the

academic load apparently doubles from the freshmen year. In junior year, the departmental core courses focus on clinical fields like hematology, the study of blood, and others. All the courses mentioned above rely heavily on reciting and theory concept understanding. A student can easily fail in tests if they fail to study attentively ahead of time. *"Most of the courses are actually highly related to the everyday practice in the field. I am not saying they are exactly matching, but most of the courses I took in college, I found them pretty useful in adapting to my current job,"* Chuck said.

Useful Courses That Connect Knowledge and Practices

By "useful" and the connection between the courses and his current position, Chuck indicated how he appreciated how theories-based knowledge was emphasized in the lab course, especially those that involve use of inspection equipment. *"Later in internship, we have a lot of opportunities to operate more updated inspection machines. At that time, I suddenly realized that back in sophomore year, when I was taking those foundational theory courses, my professors did not merely teach me how to use the machines. They spent a lot of time explaining the principles and theories that support the operation of the machines, and the hypothesis behind the approach of explaining the test results that comes out of the inspection equipment,"* he said. This tedious and slow process built a firm foundation for Chuck's professional knowledge so that he would be able to put it in real practice in his internship and his current position.

Some professors used real objects or project demonstration that effectively enhances the learning outcome. *"One of the courses that impressed me the most was parasitology. I was expecting a PowerPoint slide presentation. But the first day of class, and throughout the semester, the professor brought in cans and cans of parasites! I mean, it was unbelievable! Those real-time examples work a hundred times more effectively than pretty slides,"* he shared.

For a medical technologist, recognizing the shape of various parasites is a critical skill, as this part of knowledge is needed in inspecting samples. *"Besides bringing the samples, the professors explained how different parasites could impact human bodies and the possible type they could be like on the samples. I frequently use the knowledge in my current job,"* he said. The rich resources are very related to the university's environment. This medical university has five affiliated hospitals nearby; many faculty members are also experienced physicians that work in the hospital. The faculty members are able to bring real-time biopsy and related teaching aids to classrooms.

Internship

An exciting moment for all senior students is the white gown ceremony before going into the six-month internship. *"That was a meaningful milestone. Well, you actually need to complete the courses, internship, plus pass the national certification examination to be a medical technologist; however, the moment at the ceremony made me feel that I was part of something that was bigger than myself. That was a sense of belonging and being proud',* he said.

Sense of professionalism

For medical university students, the white gown ceremony marks the student's transition from the study of preclinical to clinical health sciences. In many countries, it is a form of matriculation. So when Chuck went into the practicum, he was treated as a novice professional, but still a professional with a white gown. While interacting with patients during the internship, Chuck was expected to demonstrate professionalism.

Practical skills

The practicum usually lasts six to seven months, depending on the organizations where students have their internship. Chuck picked a mid-size regional hospital in Taipei. His hours resembled those of formal employees who start at 8 a.m. and finish at 5 p.m., with 30 minutes for lunch break. For him, *"This is the very first time I get to know what a real medical technologist's life is like,"* he said. Within the six months, Chuck and other interns went over all divisions under the department of pathology, operating blood smear, histological section, germiculture, etc. *"As an intern, I had a lot of opportunities to operate the machines and interact with patients. I remember when I was drawing off blood for a patient the first time; I mean for the very first time in my life- I have never been doing a real one back in school! I was super nervous. Luckily I was able to hide my anxiety under the hygiene mask,"* he said.

In the university, it is not realistic to give students blood bags for only lab work. It is through the internship that Chuck had an opportunity to observe the blood transfusion procedure, and had a chance to do it. Other than that, he also got the chance to work in the micro organic lab in the hospital. Experiences like that gradually built up the skills, attitude and confidence needed as a young professional.

Up-to-date Knowledge and Skills

In addition to having hands-on experiences that match to his previous trainings, he also found that there are new knowledge and skills involved in the practicum. He said, *"In the hospital I interned in, with more advanced inspection equipment and much more resources than the university that I studied in, the equipment was more modern and advanced. Certainly, the procedures of conducting an inspection could be completely different from what I learned in school. To be honest, I am really glad to find the difference in internship, but not after*

graduation from university." However, *"It is a good thing to learn up-to-date machinery operation, yet I was also pleased to find that I have the ability to determine what the sample is showing beyond the machinery operation."* What Chuck was trying to say was that one of the everyday challenges medical technologists face is the precision of sample interpretation. As the equipment improves, this profession still heavily relies on manual interpretation on the test results. Chuck finds the lab course back in school very helpful and important, for these foundational courses strongly support his professional ability to precisely judge the sample.

Location-wise cultural adjustment

Chuck grew up in Chia-Yi City in southern Taiwan, and then attended university in Taichung, which is located in central Taiwan. Internship takes him to Taipei City, the national capital. *"Actually I purposely chose to go to Taipei. There is definitely a cultural difference between the metropolitan area and the rural countryside. The vibrant cultural activities and resources offered by the city is very different from other parts of Taiwan,"* he shared. For him, internship was not only about sharpening his professional skills; Chuck took it as a chance to explore and experience different lifestyles. *"Well, I realized that while I can't stand the weather there, internship is just right and enough for me,"* he laughed. Other than that, he thought the professional expectation of medical technologists does not differ much between different areas.

Generally speaking, Chuck considers internship engagement an important step in his professional career. He has gained a lot of experiences and knowledge professionally and personally.

Employability Needed in the Health Management Field

Professional Skills

In the internship semester, Chuck realized that to be able to thrive in the field, the ability to master necessary skills is critical. By "necessary skills," actually a medical technologist needs to know every division's duties, and is expected to be capable of covering other technologists' positions when needed. *"The fact is that the medical examination department does not usually have sufficient staffing, so everyone needs to know how to do everything,"* he shares. In his current job too, Chuck needs to know all the machine operations and examination procedures, because staff often take turns or shift duties around different divisions. Additionally, for him professional skills in this field do not only reflect the technologist's level of professionalism, *"it matters about people's health. Sometimes it is life or death issue. The attitude of taking this job seriously is more than being professional, it is a respect toward other people's lives and health,"* he reflected.

Chuck thinks two key elements of building up professional skills are attentive engagement in the program core courses, and taking advantage of the internship facility's resources. In both of these two areas, Chuck did a decent job.

General Skills

When asked about "other" needed employability skills that help recent graduates succeed in the workplace, Chuck did not think for long and answered, *"Those definitely are people skills, and the ability to clearly prioritize assigned duties."*

Communication and people skills

For Chuck, most of the experiences he had in workplace up to now have been great. The reason he mentioned this point is, even with his only two-year work experience, he has seen tough scenarios between colleagues because of poor relationship management. He shared:

Workplace is not like school, especially not like universities. As a college student, I can almost decide everything for myself, for my own good. But in the real world of work, people are not that tolerant. Well, don't get me wrong; most of the people I met in the office are kind and generous and great. The thing is you need to pay attention to manage your relationships with colleagues, supervisors, and of course your boss. Treat people with respect, and be smart to not take sides too soon. Well, it is hard to explain. But these struggles are real."

Chuck further shared, *"When you work with other people, the relationship is different from merely studying together. As more communication got involved, sometimes situations could be complicated. The ability to remain in high EQ and be calm is very important. I am still learning."* For Chuck, his student organization engagement prepared him to a certain level for the realistic struggles in the workplace. *"University, especially student association, is like a miniature society. The two years I was working with my coworkers in the student association was great practice for me to learn how to work with other people. Especially when I needed to communicate with, or even confront, my colleagues, I felt those days and nights were well spent,"* he said.

Prioritization

The other crucial attribute that makes Chuck thrive in the field is the ability to prioritize over heavy workload. *"Although we work in teams, we also have our individual tasks for*

completion. I can't wait for my supervisor to tell me what I should do first or what's the least

important; I need to be able to tell the difference and prioritize by myself. It is about

independence," he said.

Interestingly, he thought the key for establishing his own independence starts with

"choosing to attend a university far away from home." Actually there is a renowned public

university offering great program options very close to Chuck's home in Chia-Yi; however, he

purposely chose to attend university in another city. *"I think it was a good choice. Without*

parents' nagging (laugh) and help, I finally needed to take care of everything. By managing my

life, my time, my money, my friendships, etc., I kind of build a sense of differentiating what's

really important and what's not. Well, I have been making countless mistakes...Well, now I may

bring the set of ability to my job," he shared.

Chuck considers social network and independence two of the most important assets he

built in higher education experiences. Interestingly, these are the two abilities that he considered

as most critical in ensuring a recent graduate's thriving in workplace.

Overall Evaluation and Unfulfilled Expectation Regarding College Experience

Overall, Chuck seems to be generally satisfied with his college experience. *"Well, my*

college degree gets me a decent job, and prepared me as a professional. That was what I

expected from higher education in the first place," he said, although, there are still challenges

and unfulfilled expectations.

The Disconnection Between Classroom and Workplace

Although Chuck thought many professors worked hard to introduce students to the professional world, he still perceives a gap between the classrooms and the workplace. *"I mean, I know it is inevitable, but I think there must be some ways to overcome the shortage,"* he said.

Chuck thinks many of the courses' contents are too theoretical. *"Well, unless the student is pursuing higher academic degrees, a large chunk of the course contents is not practical enough. I do not oppose the theoretical knowledge to be taught in university classes, it's definitely necessary. However, it is the portion and the way it is taught that's problematic,"* he clarified. *"Given that a high ratio of our department graduates is going directly to the hospitals and clinical labs, I think more in-depth skill-centered courses should be offered and brought into the program planning consideration,"* he shared.

Career Counseling Needed in High School

Additionally, Chuck indicated another difficulty young students often encounter in transition in even earlier stage. *"I think it is definitely too late for students to explore career options after entering college. Just like me, a lot of college students did not have sufficient information and resources to explore the career world back in high school; as a result, the career choices we made were based on our guesses but do not consider self-knowledge and career information,"* he said. Chuck thinks it is more than necessary to include career preparation sessions in high schools in order to expose young students to the concept and practice of career planning.

Moreover, he also thinks there is a gap between the depth of professional core courses at the university level and high school curriculum. "*For me, the first month of university curriculum was super hard. I was just lost in what the professor was talking about in the classroom. It was too hard!*" His proposed solution was providing preparatory gap-mending courses in between

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high school and university or during high school senior year, especially for students who got early admission in February or March. *"I do think getting a sense of what college courses would be like should definitely help with the overwhelming transition experiences,"* he reflected.

Challenges From Artificial Intelligence (A.I.)

"One potential threat to my job is from robots," Chuck noted. What he is referring to is the fast-expanding artificial intelligence technology. As a matter of fact, there are rumors about how medical technologists could possibly be replaced by A.I., because of the technological advancement in medical inspections. Recently, machine learning is making great progress in cancer screening and radiology fields (Dawes, et al., 2017). *"I don't think it will happen soon, but the challenge is real. I don't know what I can do to prevent it because it is a real thing. Well, I still think human interaction is irreplaceable by machines in many ways."* Chuck's response is realistic. He knows there are inevitable challenges awaiting him, and he needs to figure out a way to face it; however, college did not equip him with adequate strategy to respond to this particular trend. Keeping a positive attitude is something he chooses to do now.

Regarding the Future

Currently Chuck's monthly wage is NT$37,000 (US $1,230). Compared to the salary of the overall recent graduate, it is a decent pay. Chuck seems to be content and happy about his current life. However, he does not see himself in this professional field in ten years. Instead, he wants something else. He said, *"This is a good position, with decent pay and reasonable work hours. But I have other plans in my life. After a few years, after I can accumulate a certain amount in my bank account, I want to try again for the art and performance career which I did not get to choose as my college major."* Chuck does not want to maintain a stable professional career; he does not want to get old regretting not fulfilling his dream of being an actor. Despite

of the difficult reality facing Taiwanese college graduates, his courage and tenacity in chasing

after his goals are appreciable.

CASE 2: YVONNE HSIEH

Yvonne is a licensed medical social worker in a regional hospital in Taipei City. After graduating from National Taiwan University, the most privileged public university in Taiwan, she passed the social worker license test, and was offered her current position immediately. As a medical social worker, Yvonne serves as a case manager, patients' counselor and advocate; an important part of her job is to provide patients and families with the non-medical support needed to deal with acute, chronic and terminal conditions. She also provides referrals to health care resources and helps patients and families locate financial and legal assistants.

In the past two years, Yvonne has been the only social worker in the entire hospital building due to the limited staffing budget of the social work office. Although she has a few colleagues, none of them have social work degrees, not to mention social worker licenses. However, Yvonne does not complain much about her position. *"In the social work field, medical social workers are receiving relatively better pay with reasonable work hours. Many of my college cohorts who are currently working in the social work field are struggling with low pay and impossible work hours. I already consider myself as the lucky one. Well, basically this is the difficult reality in the field,"* she shared.

Career Trajectory

Actually Yvonne did not find the 'difficult reality' as a surprise when she started her career. By the time Yvonne was deciding what major to study, her family actually tried to persuade her out of the option of choosing social work as the profession. She said,

When I decided to major in social work, I knew my family had a different impression of this profession than I did. They would say things like 'Are you sure you want a profession

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that makes no money? Or you just have too much love to share with strangers? You really have to know that this is not a easy path.' They tried so hard to talk me out of my decision. However, I still want to pursue what I thought was right. That's why I am here today.

The choice of university major or department has never been easy for high school students. With Taiwanese college application/entrance system, many students are "surprised" to find their destinations. Just like Yvonne; *"I did not intend to study social work initially. The reason it's on my wish list card was because their admission standard is around the corresponding test score to mine. Since I include most of the helping professions, social work was on my list as well. And here I am,"* she laughed as she shared.

Struggle over Career Choice in College Years

Yvonne did have some struggle over whether she wanted to stay in the social work field during her college years. In her first two years of college, she took some courses from the psychology department. The reason behind the struggle was actually related to her family's concern over the social work profession: The average low wage and long working hours. *"I was actually asking myself the same questions, and was trying out different possibilities by taking courses from other departments. The process was long, but eventually I decided to stay where I was,"* she said. Yvonne took more than 10 core courses from the psychology department, and was really thinking about transferring at a certain point. To her, it is the option between social work and counseling professions. After careful consideration, Yvonne decided to go with a profession in the intersection area: the psychiatric social work. *"To me, I'd like to take approaches that does not merely change a person's inner state, but to facilitate change in his or her ecological system. I guess social work knowledge and theories had influenced me strongly*

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enough," she mused. The hard work she put in the psychology department courses actually helps her hang onto the professional knowledge and development in the psychiatric social work field. Her current job was largely about mentally ill patient case management and group treatment. To Yvonne, the specific professional field is a good combination of the two college majors in which she had the most interest.

College Experiences that Enhance Employability

Yvonne considers herself as a competent social worker in her office. *"My supervisor is satisfied with my performance. She did not have much social work knowledge and training in her background, so actually she relies heavily on my professional knowledge and experiences for many tasks,"* she said. To her, the workplace is very different from university campus, regarding the level of pressure involved, role expectations and responsibilities. However, Yvonne perceives her college experiences as positive and beneficial in regard of building up several key attributes and abilities that are important in workplace.

Internships

Yvonne's undergraduate program requirement includes two practicums; the first one was in junior year during the summer break, and the other one came the following semester. These two internships actually brought distinctly opposite experiences to Yvonne regarding the quality and professional level of her experience. Both were influential, in different ways.

Internship with National Taiwan University Hospital

As Yvonne struggled to choose career pathways between counseling and social work, she found herself intrigued by the medical psychiatric social work field, which combines the two professional fields together. In Taiwan, psychiatric social workers mostly perform their duties in hospitals. Thus she decided that she would take advantage of the internship requirement to

explore the field. *"Internship opportunities in the hospital's psychiatric department are very competitive. I started preparing for the application materials very early. So I was offered the internship position in the psychiatric department of National Taiwan University Hospital (NTUH),"* she said. The two-month internship was in fact similar to real hospital social worker life. Normal work hours are from 8:30 a.m. to 5:30 p.m., with occasional evening and weekend work. Psychiatric social workers work closely with doctors and nurses regarding patients' and families' medical and non-medical matters; social workers are also in charge of the management and operation of group therapies and patients' case management. *"Internship is a great opportunity for me to learn how teamwork is understood and operated in the psychiatric social work field, and get to know what professional roles social workers are playing in the medical team."*

Internship with NTUH is acknowledged as one of the most professional internship placement in the field, due to the rich resources within the hospital and the sufficient and professional staffing with its social work department. In fact, NTUH values the internship system and looks at it as a channel of training and cultivating future employees. They screen the intern applications carefully. After internships are offered, all interns are expected to contact their supervisor to form an internship learning plan. Yvonne was assigned to plan and lead a psychiatric patient support group, under the guidance and support from her social worker intern advisor. Every week after she and the co-leader, another intern, led the group, they will go back to the group supervision meeting and reflected on the meeting, also write reflections that they hand to their advisors in the department and supervising professor in the university. *"Reflection writing and group meeting were great opportunity for me to look back and reflect on my own situation and progress through talking and writing. Both are equally important. Also, through*

individual and group supervision with my advisor and colleagues, I started to gain insights of

how the social worker professional is growing in me," she said.

Yvonne reflected on her internship as a psychiatric social worker and shared, *"My*

summer internship served as a critical career milestone for me. The two months there was like

the realization of all the theories and skills that were learned and discussed in the classroom. I

appreciate my advisor's trust and guidance. After the internship, I was certain that this is the

career path for me." The organized and structural practicum program demonstrate how social

work is respected and professional in the medical field, also enabled Yvonne to cultivate skills

and concepts that she could utilize in her current position as a hospital social worker.

Internship with Taipei Women and Family Service Center

Compared to the internship with NTUH, Yvonne's other practicum with Taipei Women

and Family Service Center was completely disorganized and shallow. She spent 16 weeks, 15

hours per week, in the center, and realized that she "had learned nothing in particular." Her

internship supervisor in the center was very busy and inexperienced, so she did not have much

time and energy to talk to Yvonne. As a result, most of the hours she spent in the center were to

help with chores, greet volunteers, and read the center's documents. Yvonne compared these two

distinctly different social work practice fields, and was even more certain about pursuing

professional development in the medical social work area.

These two internships presented totally different experiences and learning outcomes that

also contributed distinct impact toward her career choice. Yvonne's internship experiences point

out that internship engagement has critical influence upon employable skill cultivation, as well as

career decision. Health and human service field departments mostly require students to complete

certain hours of internship, yet the quality and design of internship engagement may not be

tightly managed. Given the importance and significant impact of internship experiences, the

university along with the affiliated organizations should specify the learning goals and effective

approaches for maximizing students' learning outcomes.

Professional Knowledge and Skills

    Professional Knowledge.

National Taiwan University is the most acknowledged higher education institution in

Taiwan, known for its top-notch research resources and outcomes, best faculty and students

recruited, and impact on Taiwanese society. The department was originally the Division of

Social Work under the Department of Sociology. In 2002, the Department of Social Work was

established and the core mission was defined as grooming social work practitioners through its

undergraduate and graduate programs. Continuing the NTU academic culture and tradition, the

program design of the social work department heavily emphasizes on fundamental social work

theory and knowledge. Faculty members' qualifications and the courses that are offered also

correspond with the overall research-centered university culture, which contributes to Yvonne's

strong perception of necessary social work theories while she works with different clients.

Yvonne is able to flexibly utilize the theories and knowledge she has learned in her

current job. *"Very often I use the fundamental theories, like ecological theory, life-cycle,*

interdependent relationship, etc. as a tool and concept in understanding my clients' situations

and resource networks," she noted. She was surprised to find that not all social workers can

naturally apply these theories into practice like she does; while it is almost out of her instinct to

use these theories as her professional lenses in preparing case reports, she found that graduates

from other universities just do not have the sense at all. *"I had the opportunity to supervise a few*

interns in the office from other universities. I found it very difficult to connect them to the

theoretical perspectives. I know that they had learned it in school," she said. Being able to flexibly apply theories and knowledge at work is especially important in the psychiatric social work field; to her, it is also the critical skill that highlights social workers' professionalism. *"And the added value to this ability is that it is easier for us to pass the social worker certification test,"* she added.

Other than the professional knowledge she has gained, Yvonne appreciates the open atmosphere in NTU that enables her to build her own perspectives. Many department faculty members usually share their thoughts on the critical aspects, along with their personal life experiences, to encourage students for undertaking the challenge of changing the community. *"I do think that their self-exposure impacted me a lot, by challenging me to think differently from the underprivileged populations' shoes,"* Yvonne said. She considers the sense of social justice as one of her most valued aspects of growth in the college years.

Impact on Personal Life

Other than the impacts toward her professional life, she also realized that she herself has gone through a transformation process. She began to share the perceived change intended for others to be taking place in herself. *"I decided to let the theories and knowledge I learned in the class come in to change me, including the way I deal with relationships, setting boundaries and making priorities... For me, social work is not only about my professional career, it is also a self-therapeutic process,"* she shared. Moreover, Yvonne mentioned how her background in the helping professional field influences her perspective on human behaviors, and how the particular perspectives in the profession make her more tolerant and compassionate of people's various weakness and needs. The change also contributes to her strong stress coping capability that allows her to deal with difficult moments at work and in her personal life.

Student Organization Engagement

Other than course-relevant experiences, Yvonne considers extracurricular activity engagement as fundamental experiences for completing her college life. She was the department basketball team manager for two years. Duties regarding this role include recruiting, training session organization, tournament communication and travel arrangement, etc. In addition to the clerical works involved, Yvonne finds the most challenging, yet rewarding, part as maintaining relationships and positive communication between team members. *"For me, it is a practice of the office colleagues relationship management. More importantly, I have built sweet friendships with many team members."* For her, the athletics team is not only about tournaments or activities; the benefits of social network, relationship management and the life skills learned through the process go beyond the games and made her transition to the real world of work smoother.

Perceived Gap Between Workplace and Classrooms

However, when I asked Yvonne how much does she think college experience prepared her for her professional career, she stated her disappointment. *"There is a huge gap between the practical skills I learned in university and the level of skill that was needed in real field work. I looked really bad in the first year at work,"* she said.

Professional Gap

For Yvonne, 'the gap' first presents in the lack of social work practical skills like psychiatric and social work interview techniques, and the in-depth understanding of the needs of various groups. Yvonne thinks while NTU excels in building firm foundation of students' theoretical knowledge, it provides too little and too shallow a kind of trainings and gives too little resources for cultivating future social workers' practical skill build-up. *"For some needs*

like the interview techniques that turned out to be critical in my everyday work, the department did not offer such training. Actually NTU might be the only school I know that does not offer this course," she said. To mend the gap, Yvonne's first six months in her current position were very difficult. She was asked to keep transcripts of every interview she conducted with patients and families and analyze those interviews line by line to reflect if mandatory skills were properly used. At that moment, she even questioned herself if she had chosen the wrong career. *"After the first six months, things got better. I just wished that I had learned these back in university. That would certainly make the transition easier,"* she said.

Additionally, courses that are supposed to introduce students to current service systems and understand the needed community or client groups, Yvonne thinks many of them did not touch the point. In some of the fundamental practical courses in junior years like case management and group counseling, Yvonne thought the training was not solid enough to really build students' competitive ability for their future career. And even when the course instructors did try to connect students with the present service system, it was not effective enough. She commented:

> *"Most of the examples mentioned in class are from other countries. I do not oppose extensive knowledge of the global social welfare system, but most of the teachers are not practitioners in the field so they are actually very unfamiliar to the Taiwanese system. How do you expect students to understand and even be able to critique or improve current system they know nothing about it? It is unrealistic."*

Maturity Gap

The other side of "the gap" presents itself in the attitude of some recent graduates. Yvonne thinks most graduates are not ready to face the reality when they step out of campus. She

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said, *"There is a huge difference between being a student and a professional. First of all, the level of responsibility is distinctly different. University campuses offer great flexibility and a very high level of tolerance toward college students' behaviors, including the irresponsible and lousy parts. However, most employers will not."* Yvonne particularly points to the lack of adequate communication manners and skills, along with a lack of stress-coping strategies. While she pointed out the problem, she did not think university curriculum should take care of this matter.

Overall Evaluation of Higher Education Experiences and Unfulfilled Expectation

As we talked about her perceived goal of higher education, Yvonne had a lot to say. First, she does not consider higher education as a career preparation center. *"If we are just looking for someone who can do the job well, a vocational school graduates probably will do a better job. I think higher education is not only to prepare workers to fulfill positions; instead, higher education should be considered as an important stage to cultivating knowledgeable citizens with social justice values. However, knowledgeable citizens are not more likely to adapt to the workplace culture though,"* she said.

Moreover, Yvonne thinks university should provide extensive courses and resources that enable students to touch upon different fields of knowledge and life experiences. She said:

> *"I think general education makes a lot of sense, and did help me reach beyond my concerns and attentions out of my little world. I'd expect a college graduate to respect and generate a great level of tolerance and acceptance of different perspectives for coexistence. I think NTU provides a great environment for allowing students to explore different opportunities, as well as providing a platform for dialogues to happen and*

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conversations to be conducted between different standpoints. I would think it is a great

institution to pursue a degree."

Yvonne also considers college years as the perfect timing for a young people to explore

their strengths and weaknesses through participating in various activities, especially leadership

opportunities. *"Relatively this is a safer environment for young people like us to explore, and I*

believe this is very important in this stage as we are all trying to find our position in the world,"

she claimed. Just as she mentioned before, it is not only about training a person to fulfill a certain

position, it is about the cultivation of a whole being.

Regarding the Future

The day we met for the interview, Yvonne was about to find out her new appointment,

which means she was about to quit her current position and start a new career in one of the

government departments. The reason for this change is common among recent graduates for

several reasons: Salary, position security and career development opportunities. *"It is a hard*

decision. I love what I do, but the social work professional field generally does not pay well

enough to keep passionate talents here," Yvonne said. The long work hours, overtime, high risk,

and low wage are all potentially harming for the sustainable development of the field. Other than

the threat in the field, Yvonne also thinks it is hard to maintain hope for the foreseeable future

for young people in Taiwan. For her, turning her career track to federal government position is

just a corresponding way to fight for her future. As she does not plan to leave the country, all she

could do was to find a reasonable position that is relatively more secure, then wait and see what

is coming up next for her.

CASE THREE: SUE KANG

Sue is a registered nurse (RN) in a hospital in Taipei, Taiwan. At the time of the interview, she was in the second year of her professional career. After completing her college degrees in gerontology health management and nursing, she passed the nursing certificate examination, and started working in a local medical center, which is affiliated with Taipei Medical University where Sue graduated.

Career Trajectory

Sue always knew that she was going to work in the medical field. Since she was young, her father tried to engage her with activities like medical camps, biomedical after-school programs, etc. Her family also encouraged her to explore the trajectory of applying for medical school. *"Well, and it turned out that I do work in the hospital, however not as a doctor, but a nurse,"* she laughed. In Taiwan, medical doctor is a highly-respected profession. Many parents see medical school as the ultimate pathway to their children's dream career. However, admission to Taiwanese medical schools highly depends on the college entrance examination scores. On average, only top five to seven percent of the Group III students are eligible for admission to medical schools. Sue did not have a high enough score to be successfully admitted to one of them, so she put other related departments on her wish list card. As the placement was announced, she found that she was admitted to the department of gerontology health management in a medical university. *"I was told that gerontology is going to be trendy in Taiwan, because we are facing the aged society issue. I did not know much about the program before I started it. Well, it turned out to be a little bit different from what I expected,"* she said.

Just as Sue indicated, Taiwan has officially entered the stage of an "aged society" as Taiwanese people over 65 years old accounted for more than 14 percent of the total population, according to Taiwanese Ministry of the Interior (2018). That means out of seven people in Taiwan, one is a senior citizen. Sue mentioned, *"In my university, the department of gerontology and health management is under the College of Nursing. I learned that the program exists to equip professionals with knowledge and skills in the field of aging necessary to improve the elderly's quality of life. However, there is a serious problem for graduates from this program; that is, unlike graduates from the nursing program, we are not eligible for taking any professional certification examination."* Hence, Sue's friends gave her the advice of taking the nursing program as the double major degree; and that's just what Sue did. She spent five years in the medical university and graduated with double degrees in gerontology and nursing. *"Just as what the seniors told us, my nursing degree got me a job*," she said.

Employability Needed in the Nursing Field

Taiwanese nurses are segregated into three categories based on length of training, comparable to the licensed, registered, and advanced registered categories in the American system. Specialist nurses (專科學校) study for five to seven years, normal nurses (普通大學) for four years, and inaugural nurses (在職專班) for two years. The category college nursing students fall into is the registered nurses. However, for Sue, since she was first admitted to the gerontology program, her experience was different from typical nursing school students. For double-majoring students like Sue, completing the required credits is not the most challenging part; it is the "unofficial resources and information" that actually impact the career transition that really matters. *"After I started working as a RN, I deeply felt that I am totally not prepared for*

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job. Well, it could be me, but my cohorts who takes the similar track like me are facing the same challenge," she said.

When asked about what skills and attributes graduates need to thrive in the nursing profession, Sue immediately responded, *"I do not think I am thriving; in fact, I feel like I am hardly surviving,"* she shared. Sue remembered that during the first three months, she cried every day after getting off work. *"I would go home crying first because of the pressure and challenges at work, then got dinner, kept studying for one hour or two, then cry again before going to bed, because I had to get up and go to work again the next day,"* she said. Transition from studenthood to professional life was more than tough for her. Not only was the mental pressure facing her, there was another practical obstacle. *"I was very afraid that I won't make it through the three-month trial period,"* she said. Trial period is a typical practice in the Taiwanese job market. Newly-hired employees are given two or three months to prove their adaptability and skills. Individuals that pass the test will be given formal offers, otherwise, the trial period will end and the newly-hired lose the position. For Sue, that was a pressure that she was not ready to take on. *"I was the 'smarter one' who got better grades in the house. My work experience completely shattered my self-confidence. I once thought I was able to take on all the challenges in my life, but now I realize I could not. I think my problem is that I may know how to study in school, but I've never learned the right way to get things done,"* she said.

By "the right way to get things done," Sue thinks that a graduate should have professional knowledge and skills, ability to apply theories learned in school to workplace, the flexibility and a sense of prioritization, a certain level of stress-coping skills and resilience.

Professional Knowledge and Skills

"Workplaces like hospitals do not allow mistakes, it is a life-or-death matter. In the university classrooms, and even internships, I did not have enough opportunities to practice various skills that are commonly used in the field; and this weakness causes huge problems," Sue said. Professional knowledge and skills in the nursing field have a critical effect on the transition quality. Senior nurses and supervisors do not have much time to teach new nurses basic skills. Starting from internship and the trial months, Sue realized that the hospital actually expects interns and incoming nurses to be fully trained and able to operate independently. However, compared to licensed nurses that graduate from vocational high schools, Sue thought graduates from university nursing programs are apparently lacking in immediate practical skills at the start of their career. *"I felt I had a lot to catch up on in regards to everyday skills and mandatory medical procedures to meet the minimum job requirement,"* she said.

People skills

The other aspect of skills Sue perceived as "very critical" were the people skills that allow recent graduates to adapt to the unique culture in nursing stations. *"Maybe because nurses work long hours and bear a heavy level of pressure, I feel like nurses really like to complain and gossip, especially back in the nursing stations. In addition, there are many cliques in the department. If you choose the wrong clique, life could be very hard."* At first, Sue had no idea how to respond to such a complicated situation; in fact, up till now, she is still looking for a way to live with it. She has observed that some of her cohort new nurses adapt to the workplace culture pretty smoothly. She thought it was because of their proficient skills that got senior nurses' favor; also they had tighter connections with other colleagues, since most of them graduated from the nursing department from the same university. The disengagement Sue perceived toward the workplace brings the sense of alienation to the relationship she held with

colleagues. Sue thought that the simple lifestyle and relationship back on campus was totally different from workplace. While some of her colleagues are dealing with these situations well, she felt powerless and frustrated. *"My colleagues advised me to take these gossips easy, and learn to respond in their tone...but I do not wish to be like that. It is hard to keep being who you are here. I am afraid that one day I will be like them, purposely giving new people hard times, and complaining about everything,"* she shared her worries.

Stress-coping Skills

It is not only the skill level that was not being well-prepared; Susan mentioned another aspect of preparation. She felt that stress-coping mentality and skills are totally ignored in the professional cultivation process. *"When I was interning, I was not given any real tasks. From my observation, nurses are busy, but they were kind and tolerant to us. However, when I became a nurse, I found that the bars set for real nurses are absolutely high. If I was taught or shown this piece of reality when I was still a student, at least I would know how to get myself ready somehow,"* she reflected.

Flexibility and Adequate Prioritization

Sue shared that the nursing profession is a labor-intensive field, as nurses often have a lot on their plates including meeting various patients' needs, filling out records and assisting doctors with their orders, etc. *"The challenging part is to differentiate the priority among tasks, and identify help that I need to accomplish the tasks,"* she said. Sue shared that sometimes there is no such thing as standard procedures to get tasks done in the field; mostly it all depends on the different training background the nurses possess. The ability to get things done in the most efficient way is currently a task she is learning.

College Experiences That (Ideally Should) Help Build Employability

Although Sue thought she was not well-prepared for life after campus; still, there are some elements in her college experience she considered valuable in terms of employability building and preparation for her professional life.

Flexibility With Double-major Options, and the Situational Problem

The moment that she found out that her original major, gerontology health management, might not meet her ideal career expectation, she decided that she wanted to double major. Sue considers the flexibility for students to take courses outside of their professional field, and the flexible academic regulation that allows students to double major to be beneficial and helpful as college students need flexibility like this to explore various career options.

However, for Sue, even though she had completed all the courses and practicum hours needed to take the registered nurse license examination, she felt like there is a missing link in her experience as a double-major nursing student.

"First of all, unlike students from the nursing program, double majored students are not assigned advisors or mentors from the nursing department," she said. In nursing programs, advisors and/or the mentor system play a significant role in ensuring students' learning outcome, and helping students' adjustment in various internship placements. *"Double major students like us are on our own,"* she sighed.

Besides the lack of professional advice from department faculty members, Sue indicated the second problem,

"I think nursing program students know well about the career track and started to

prepare for the challenges wholeheartedly early in their career preparation. We are not

like that; like me, I have spent almost three years fooling around; when it came to the

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time for practicum, I realized that I was actually very close to the time of facing the

reality. It was actually a bit too late."

Sue thinks that nursing is a profession that comes with heavy pressure and intensive

learning processes. She wished that she has had more robust training from her higher education

experience that prepared her better for the tremendous stress in the job.

Internship

Sue considered internship as one of the most important connection between curriculum

and the profession. In Sue's program, internships are designed to meet the minimum hour

requirement for eligibility of taking the registered nurse certificate examination. In students'

junior years, students are to be assigned to different clinical departments, mostly in different

medical centers or hospitals, to spend one month in each department. Altogether, Sue had been to

five different required departments in different hospitals in Taipei.

However, in terms of internship, the learning session that she expected to gain the most,

she was equally disappointed. What Sue thought there was "not enough" in the depth of learning

outcomes. She complained:

"As an intern that only was going to stay in the department for less than 80 hours, most

supervisors won't be comfortable of letting us operate medical procedures. In the seven

hours I spent in the hospital, I figured that only less than two hours I was able to be with

the patients or learning new stuff in the field. Another five hours, I was doing exactly the

same thing as in the classrooms like meeting with my campus advisors, paper

discussions."

Additionally, nurses are very busy with a tremendous load of work. Sue's assigned

supervisor from the department did not have much time for her. Sue thinks the lack of sufficient

practicum time was a critical weakness in her nursing education experience; as a result, when she started her first position in the hospital, she needed to learn everything from scratch. *"I wish we were given chances to do something more realistic,"* she reflected.

Professional and Theoretical-based Training

Although Sue regretted the lack of proficient skills on the job, she appreciated the heavy theory-based curriculum that helped her build in-depth knowledge on clinical and pathological diagnosis and treatment. She reflected:

> *"It is true compared with vocational high school graduates, college nursing program graduates look slow and lousy in practical skills, and we need time to make up the gap in the beginning of the career. However, I feel that our strength is on the diagnosis and the application of theories and professional knowledge, and it is easier for us to communicate with doctors in the professional level, not only following their orders. I think that the college nursing program is set up to prepare for management level nursing professionals.*"

Overall Evaluation of Higher Education Experience

For Sue, her college life generally was happy and smooth. She spent much of her time hanging out with friends, and completing required course credits. However, when she reflected on what she thought was not enough in her higher education experiences, she first indicated that the universalized higher education system has "made the degree cheap." While looking back, she wished she had done something different. *"Well, since I graduated from the nursing department, and I passed the registered nurse examination, going on to the nursing profession was an easy decision. However, I don't know if this is what I want,"* she said. The past year in the workplace makes her hesitate about her original decision. She is still looking for her role in the world,

searching for her identify, as well as the right career path to take. Sue said that if she was given a second chance, she might not choose to attend a university at all; instead, she might be applying for vocational high school, and go on for an associate's degree. To her, *"Higher education does not seem to be a worthy investment of my time and money."*

When I reviewed the interview transcript, I realized that most of time Sue was telling me how unprepared she was for her professional life, and how clueless she was regarding her future career plan. She wrote in her reflection,

> *"I think my stress-coping mechanism is weak. When my supervisor points to my shortcomings, it brings so much pressure on me that I feel like I'd explode. My college years were happy. I did not feel too much pressure with my courses, my professors did not push us too hard either. Now, it is time to face the reality. The past year showed me that I am far from prepared for the professional life, regarding skills, knowledge and social skills. I wished I could go back and relive my college life."*

Sue's sad narration saliently reflects some young graduates' struggles. As she looked back and tried to see where the missing link was, she mentioned about how she regretted that she did not take advantage of the career information sessions and counseling services provided by the program and the university. "*The resources were there; however, I was not ready to use them,*" she said. As the higher education institutions are striving to provide resources, college students' readiness needs to be taken into consideration as well. Various levels of support and assistance should be carefully tailored to fit students' different stage needs.

CROSS-CASE DISCUSSION

Human services and healthcare have always been a critical section in Taiwanese society. Recently, the Taiwanese government has been actively promoting Taiwan as a medical tourism destination in order to attract visitors from Asia and from all over the world for health-related purposes. Many different professions fall under the big umbrella of health and human services profession, and most of them are highly skill-centered and required a high-pressure lifestyle.

The three participants presented in this chapter reflect on their own unique life journeys, as well as the shared struggles of young people in these fields. There are specific attributes and skills needed to thrive in the transition to professional life in the area, as well as the challenges and obstacles that need to be overcome.

Needed Employable Attributes in the Human-service and Health Management Field

Working in the field with demanding needs, specific professional skill sets, and frequent inter-personal interactions, young professionals are expected to possess certain attributes and skills to be competent on their jobs. The participants' experiences from various positions indicated several needed skills and attributes that are critical for succeeding in the field.

Professional Knowledge and Skills

Working in professions that take care of peoples' well-being, physically and mentally, can be stressful. Just like one of the participants said, *"It is sometimes a life and death matter."* Skills that are up-to-date and correspond to the accepted standard procedures enable graduates to adapt to the fast-pace work environment, and meet the expectation of their supervisors and colleagues (and their patients/clients). However, recent graduates reflected that there is a gap between skills taught and learned in the university and those needed and practiced in the field.

Other[??] programs lay out their curriculum differently, but participants' experiences point out the need of tighter connection of higher education with up-to-date practical skills and knowledge that aim to prepare them professionally.

People Skills and Communication

Health and human services professions require professionals to frequently communicate and work with clients, patients and colleagues. Although professional knowledge and skills play a critical role in succeeding in the field, graduates with decent people skills would adapt to the new environment with more confidence and a greater sense of satisfaction; in the meantime, good people skills allow graduates to build relationships with supervisors and colleagues with fewer struggles. As college graduates are expected to demonstrate professionally, they are also expected to show positive and mature characteristics. Workplaces like hospitals, clinics and social work departments attend to real issues; they also require frequent cooperation between departments and people of different expertise. Great communication skills surely will help graduates' transition and their subsequent career.

Prioritization

In the list of significant survival skills needed in the fast-pace work environment, what stands out is the ability to adequately prioritize among given tasks, in a manner that corresponds to the organization's timely needs and supervisors' expectations. The ability to prioritize is closely connected to flexibility and organization skills. In the field that tackles many tasks regarding mental and physical health issues, prioritization becomes more critical than in other fields. Participants reported that they practiced and built up such skills through internship experience that allowed them to realize what the real world of work is like, and how senior colleagues deal with pressure and multiple tasks at work. They also emphasized that such

abilities and senses are hard to cultivate in university classrooms or through curriculum; on-site observation and training have its irreplaceable impact in the cultivation process.

College Experiences that Helps Building Employability

Given the weight of essential skills and attributes needed in the field, college graduates express the necessity of positive college experiences in regards to employability building. According to the participants, there are some engagements and experiences that contribute to employability building more than others.

Courses That Connect Workplace Reality to Classrooms

Although graduates reported that many times they find there is a gap in the skills taught and trained in the classroom and the needs of the work place, which is often overwhelming, they still appreciate the effort that instructors put in to introduce what employers are looking for. Courses that introduce cases and examples from the field, and allow students to contact and interact with current workers in the field, like field trips and cooperation in events with related organizations, effectively help students get a sense of what the necessary skills are, and how these skills can be applied in the workplace. One of the participants mentioned that the reason the gap exists is because the faculty members are very far from practice, and could not offer up-to-date information of the field, which appears to be true especially in the research-centered higher education institutions. As for the feasible ways to resolve the problem and reduce the gap, participants expect to see more connections through field experiences and inclusion of faculty members (or guest lecturers) from the practical field.

Internships

Although not all three participants express full satisfaction with their internship experiences, all of them acknowledge the importance of the internship program. As they

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indicated, practica serve as the most critical connection between knowledge and theories learned in classroom and the real world of work. Generally speaking, through internship involvement students gain insight of a regular staff member's life and responsibility, and are provided with the opportunity to test out the skills they have acquired through university curriculum, while learning new knowledge and skills at the same time. However, to maximize the value of internship, a more robust internship coordination and mentoring system that closely guide college students through the learning process is urgently needed.

Leadership Training Opportunity

When the graduates reflect on their college years, many mentioned how extracurricular activity involvement like student organizations and volunteer experiences contributed to enhancing their leadership ability, as well as their organization skills and communication skills. Some graduates shared that the engagement with these leadership opportunities prepared them mentally and practically for tasks and relationships in the professional field, especially on their teamwork and project implementation capability, which they found extremely beneficial in the workplace. Additionally, these engagements also build up friendships that support graduates in life, particularly in career transition period.

Challenges for Graduates in the Health and Human Services Fields

As for challenges facing young professionals in these fields, besides the overall Taiwanese economic, social and political difficulties, graduates in the health and human service industries are specifically confronted with the new trends that are changing the world.

Technology Advancement Like Artificial Intelligence (A.I.)

The buzz of how Artificial Intelligence (A.I.) is taking away jobs is happening in many professional fields, including the medical and health management professions. Some even predict that robots will take over doctors' responsibilities in two decades. Debates on the level of advanced technologies would respond and detect symptoms and disease faster and more accurately than human is not settling easily. What's really concerning me is that, graduates do not feel that they were not informed or prepared for the challenges coming their way. It is more likely that the faculty members and the curriculum did not take the challenge seriously, and did not intend to prepare students to actively respond to the threat. In fact, the Taiwanese government is progressively investing in the biomedical technology field that is very closely connected to the A.I. advancement. Higher education educators should think about how universities could effectively engage students in the research and practice along with the trend.

Challenging Career Development Track

Recent graduates in the medical and health field face constant struggles over their career options, regarding whether they should pursue government positions that offer better benefit packages and job security, or stay in the track that better suit their expertise and interest but do not pay as well, and do not provide clear career advancement trajectory. Except for government jobs, companies and agencies that are willing to provide tenure-track like positions are harder and harder to find. More companies are offering contract-based positions that do not provide career advancement options, which make graduates unable to "see their career future." Furthermore, the overall low wage highlights the problem that is threatening Taiwanese global competition. The plight of young workers indicates a serious problem for Taiwan which has gone from a young and vibrant "Tiger" economy to an aging and unsteady one in just two generations: The working-age population is not growing fast enough, nor earning nearly enough

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to pay for their parents' retirement. Although the current government led by President Ying-wen Tsai proclaims to fight the difficult reality, policy interventions are not effective and efficient enough to benefit current graduates.

Chapter Seven:
The Entrepreneur College Graduates' Experiences

Introduction

While most college graduates locate positions offered on the current job market, some graduates are planning differently. According to an annual online survey by 1111 Job Bank in 2018, a large number of young people in Taiwan are still interested in running their own businesses as a career option. The poll showed that more than 76 percent of Taiwan's young people have either already embarked on entrepreneurship or would like to do so. As for the reason for starting their own business, low wage is cited as the top motivator for entrepreneurship, with more than 60 percent of those wanting to start their own businesses stating they earn less than NT $35,000 (US $1167) per month. Meanwhile, high unemployment, artificial intelligence, big data and social media are all prompting young people to start their own businesses, according to Da-Hua Lee, deputy general manager of the 1111 Job Bank.

However, while most of Taiwan's young people find entrepreneurship an attractive option, only a small percentage of them are actually in business (4.46 percent), have tried it before (3.18 percent), or are about to do so (seven percent), the poll showed. In terms of startup investment, young people in Taiwan put an average of NT$633,500 (US$20,792) into their own businesses, with 78 percent of them coming up with their own personal networks; the other 22 percent taking loans from the Small and Medium Enterprise Administration, according to the poll (1111 Job Bank, 2018).

In order to find out how college experiences contribute to enhancing recent graduates' general and specific skills needed for entrepreneurship; two young entrepreneurs were invited to participate in the research. The researcher's original intention was to find entrepreneurs from

various business fields, especially one from the high-tech industry; however, entrepreneurship in

the STEM field usually requires a graduate or higher degree for the nature of the business area

asking for cutting-edge technology innovation. College graduate entrepreneurs are mostly in

non-high-technology field. From the information and reflections collected through the interview,

the participants' experiences indicate positive employability enhancements via general college

experiences, but they also point out the shortcomings of Taiwanese higher education in terms of

nurturing successful young entrepreneurs.

CASE ONE: JEAN TSAI

A professor introduced me to Jean. The professor introduced her as *"one of the most special students she had taught in the past decade."* Jean started her own music and art-performing studio when she was still in college. Now the company has grown bigger and stronger, extended the business scope to different cities, produced several music albums and established a popular YouTube channel among Taiwanese children's music field. Currently, she is the CEO of the performance art group and is pursuing a doctoral degree in broadcasting. She said, *"I did not plan on achieving any of these. Life just brought me here."* Owning a successful business is not the only reason her professor spoke highly about her. After knowing more about her experiences, I realized that she did not have the "straight-A student profile." Before high school, her class ranking was always among the last in her class. That really made me curious about how her background and experiences contributed to her "success" today, and what possibly could be learned from her experiences to enrich the school system.

Career Trajectory

For Jean, going into the early childhood education profession was not intended when she was in high school. In Taiwan, many vocational high schools offer childcare and early childhood education programs. However, it is viewed as a "semi-profession" because of the large number of high school graduates in the programs and the overlapping knowledge and skills they have with parents. The ignorance of the importance of early childhood education also lightened the community's respect toward early childhood educators and students in this field. As a result, kindergarten teachers and childcare providers are not heavily weighted in the Taiwanese culture. The reason Jean chose to enroll in the program was not that she was planning to be a

kindergarten teacher. *"I don't really like teaching young children,"* she admitted. The reason she stepped into the field was because Jean felt like she really likes performing arts, singing and dancing; the program fit great for Jean's need. With her family's encouragement, Jean enrolled in the program; and the three years turned out to be promising and enriching. Her academic performance started to shine in high school. *"That was the first time I started to believe that I can learn something, and learn it really well,"* she reflected.

Influential Mentor

The impact of the positive high school experience was mostly related to a fitting homeroom teacher. Jean related:

> *"Her style is very different from other teachers in that school. She believed in self-regulations, so she gave us the opportunity and freedom to be responsible for ourselves. In addition, that subject my homeroom teacher taught was related to performing arts. I think that was a starting point for me to really get into the field. I mean she encouraged me to develop my potential, and provided me with resources I needed. I found that I had a lot of fun performing on stage for grownups and little kids. What I learned in class was very practical."*

The teacher encouraged Jean to go further and believe in herself. With the support from that positive interaction, Jean decided that she would continue on this path and see how far she could go.

Limited Option of College Majors

When it comes to the moment of choosing college majors, she did not have many choices. For vocational high school graduates, the options of programs are very limited compared to regular-trajectory high school students. Due to the limitation of the selection of

courses they took in high school, they can only pick from some certain fields that are closely related to their previous programs. For Jean, she only had nursery and childhood education program, nursing program, performing art, foreign languages and cosmetic industry on her plate for college program selection. *"My mother did not want me to go into the field of performing arts, she thought I won't be able to make a living, so I ended up choosing the same program as my high school major, the nursery and early childhood education program,"* she explained. Interestingly, what she did not choose, the performing arts program, ended up becoming her current career.

Setting goals for college experiences

Anyways, she took her family's advice, and started studying in this private university in its nursery and early childhood education program. *"But before I even started my first day as a college student, it was clear that I was not in the university for studying only."* Her words aroused my interests. As she continued to talk, I realized that she was very clear about what she wanted to obtain from higher education experience. *"I am clear that I was not in the college for purposing more knowledge in the field. My goal in the four years was to expand my social network, and see how my skills can be practiced in real life work. I have a lot of classmates from the regular non-vocational trajectory, I feel like I am very different from them. I don't just want a degree, I want more."* By the time she left college, she had been awarded several student entrepreneurship funds, started her own business and was offered a lecturer position in a local high school. Compared to other immediate college graduates, that was definitely "more."

College Experiences that Enhance Employability

Extra-curricular Activities that Unleash Potentials

In her junior year, she started to find that her strength was in performing and communication. She enjoyed her time on the stage interacting with audience. *"I know I will not be content being a nursery or kindergarten teacher; I am not saying it's not important, but like I said: I want more,"* she said. Her choices of 'activities' to fill up her college schedules were mostly about student leadership organization participations and performance for various occasions. Other than the leadership roles she took in student organizations, she also volunteered as the news anchor for the campus TV station, which led her to be interested in pursuing a Master's degree in broadcasting.

People Skills and Leadership Opportunities

When she reflected on her college years, she pointed out three sets of skills and abilities that were developed in the four years that made her succeed in starting her own business. *"I volunteered for several student organization leadership roles and built a wide network in various fields.* "For three consecutive years, she was in the leadership team of various student organizations. *"The most important skill is people skill. After these years, I realize that your professional knowledge and skill will not shine if you don't know how to get along and communicate with people. I think it takes time to get the sense to sharpen social skills."* She gave me examples from her business expansion of how she built up relationships with large influential companies so they can further cooperate on future projects, and how she sells her ideas to people who usually look down on young entrepreneurs, and also her leadership style in the company.

"I appreciate my experiences back in college, especially when I was serving in the student senate committee. I was not the primary leader at that time, but being the

secretary gave me a front row seat learning what a good leader looks like and thinks like.

I learned to build public relationships, interact with influential figures, and even details

of the gesture of delivering the business card in the most appropriate way."

Jean acknowledged how her past leadership experiences helped her learn good

coordination between different departments, and become an influential and effective leader.

Problem Solving Skills

Jean started taking part in the student senate committee during her sophomore year as an

assistant secretary to the president. Running a student senate committee could be complicated,

given the nature of the political matters and secretary logistics involved. For Jean, this part

established her sensitivity and skills for solving problems, logistically and interpersonally. *"I do*

think it takes time to build up the right sense when dealing with organizational affairs. I learned

a lot of skills from the president I used to work with." These skills eventually helped Jean shape

effective strategies in building her own business. These leadership opportunities helped her build

strong practical skills that could not be gained in classroom.

Administrative Abilities

The other set of skills that Jean learned through student organization engagement was

administrative abilities. Jean represented her university in several national contests regarding

student organizations evaluation, a significant event in the Taiwanese college student affair field.

The evaluation competition requires all participants to clearly present their history of activities,

financial reports, community benefits, personal growth, etc. She said, *"Frequently I needed to*

deal with large amount of secretary work, paper work … after a while, I realized that I was very

clever about it, I kind of have my own style after all these practices. The set of ability has helped

me go really far." Today, when she runs her own organization, she keeps records over what the

organization has accomplished over the years, and these detailed records on paper and videos effectively broaden her business scope.

Growing In a Stressful Environment

Jean had learned how to grow in stressful environment. She said:

"On behalf of the student organization that I attended and the university, I participated in many different levels of student organization showcases and contests. I have to say I really had gained a lot through the engagement of competitive and high-pressure moments that does matter. I'd say it is a process to find out how I can fulfill my potential for teaching and leading an organization. I appreciated that the university offered me many opportunities to do things that not all college students get to experience. Without these student organization involvements, I wouldn't be the person I am today."

The pressure from participating in student organizations mimics the pressure from the business world that helped her overcome difficult moments in the narrow path to entrepreneurship.

Internship Experience

One of Jean's most important memories about college experiences is the oversea internship in Shanghai, China, which occurred during her junior year. *"My goal was to stand out and demonstrate my ability through putting up my utmost effort."* And that's what she did. The internship allowed her to be a teaching assistant in one of the childcare centers in Shanghai. The connection with the center was through a faculty member from her college program. For her, internship not only familiarized her with the protocols in early childhood education facilities, it provided her with a chance to build her network and expand her expectation of herself in this field. The shared two months in China opened her eyes and helped her realize that *"There are*

people out there, actually very close to us, who are looking at early childhood education in a much broader view than us." While most of her classmates in college plan to earn a childcare certificate or become nursery teachers, she found that there are much more than these options in the early childhood education field. *"I met people who develop apps for early education, people who manage children's books and other publication, also realize that there is a huge market out there with all kinds of possibilities. I guess that also kind of inspired me to think about the possibility of developing my own business."*

Social Network

Jean considers building connections in college as one of the most important gains through the four years. *"Before I started college, I already told myself that I am going to participate in a student organization and learn a lot from it, and I am ready to expand my social network to where I have not been."* The engagement with student government and campus television station, along with many contests that she participated in, had enabled her to build strong connections with the faculty members, campus administrative staff and other college students with similar minds. She said,

> *"Unlike other college student, I do not care much about my overall GPA. To be honest, I did not spend much time on my study. However, I worked very hard on other stuff that really mattered to me, which ended up helping me the most after I graduated. Great relationships with university administrative staff is one of those things. When they need student representatives for some meeting or a seminar, they will ask me to go because they know me. I went to many events with them for business meetings. That's been absolutely special and interesting."*

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Embarking on Entrepreneurship

Cultivating entrepreneurship is never a single-event process. From Jean's experience, every involvement that pushes her further to reach her potential and strength counts and means a lot.

Senior Year Project

Interestingly, Jean did not voluntarily start her current company. Entrepreneurship was actually her friend's idea, *"It just turned out that I am the one who is running it till now,"* she laughed while she shared the history. The starting point was the required senior project. When she and her friends started planning for the project in junior year, they decided that they would not choose to *" just do some research and produce a stack of paper that nobody was going to read."* They decided that they would make a real children's music album. Their advisor, who was assigned to guide them through the project, had expertise in children's music. And the advisor also happened to have connections in the music industry. Given this group of college students' enthusiasm and passion, the advisor guided them step-by-step through the process of producing the album. She said, *"That was the time I surprisingly found that there is a professional studio on campus!"* They worked hard, spent 10 to 12 hours per day on the project for more than three months. Their advisor also connected them with industry experts and producers in the field. She said:

> *The reason I chose to complete a project instead of conducting a research project is that*
> *I think a stack of paper won't help me much in finding an ideal job; but a album with my*
> *name on it certainly will. See, since you already invest lots of energy and time and money*
> *in it, I feel like it would be a shame if the whole project provides no benefits for finding*
> *you an ideal position.*

Indeed, the debate of how higher education should serve for the purpose of job preparation is still unsolved; however, Jean's argument does point out that many college graduates are not able to bring their knowledge and skills gained in college years to workplace. *"Many of my friends I knew in college did not really know what they want to do by the time they were leaving campus. There are very few skills and abilities they are bringing with them to their next stage of life. I think that is pathetic."*

Applying For Funding

Jean's group spent more than NT $80,000 (US$2,700) out of their own pocket for this project. *"Compared to writing a research paper, this is expensive (laugh). But to me it is totally worth it. This money bought me a different future, a unique line on my resume and an experience that not many people have."*

However, NT$80,000 was still a huge amount for students like them. *"Actually it's kind of funny, we started thinking about starting our 'business' only because we really spent too much money out of our own pocket. We needed something back."* When they went to their advisors and university staff, many encouraged them to participate in project competitions in the field, which offer award money. They began with the college-level competition in the university, and then went to the university level. Then they went all the way to the national level. The team even participated in a competition in Mainland China. It's not like they always won, but the accumulation of these small amount of awards did help them a lot. Jean related:

> *As for the idea of starting the business, it also began with a entrepreneurship project*
>
> *contest held by the university. We were very lucky to win first place in the competition.*
>
> *And the award was NTD$150,000 (USD$5,000). Plus other rewards we received from*

other contests, altogether the university offered me NTD$230,000 (USD$6,700) for the

start-up funding.

Campus Supportive Resources and Atmosphere

When asked about the key element that made her entrepreneurship possible, she said, *"I would definitely say that the university plays the most important role in encouraging me to step out of my previous limit, giving me generous resources and funding to make everything possible. I understand that for the university, our project would benefit them for advertising for admissions, something that I care about now. I wouldn't think I would be able to do that if I decided to attend another university."* In Jean's cohort, at least three other graduates also developed entrepreneurship projects in the other business field. *"I think the university creates an atmosphere and makes all resources available for students who are willing to give entrepreneurship a try. I really appreciate that.*"

She continued to share how they eventually decided to form a performance art group that targeted children's music promotion. A lot of the business ideas sound creative and mature. It was hard for me to believe that I was talking to a recent college graduate who has only graduated from university two and half years ago.

Network Resources

Additionally, Jean also took an overseas internship as a unique opportunity to build an in-depth connection with the faculty that happened to help her a lot when she decided to start her company. *"Professor G was a teacher who acknowledged my hard work, listened to what I had to say, and supported my ideas. She has so much impact in this field. When I told her my ideas and thoughts, she knew that I am not like other college students that only want a degree or a*

certificate. She gave me the opportunity to connect to other resources and influential figures in this field. This helped me a lot in my future endeavors."

Essential Skills to Learn Through Higher Education Experience

After all this, she reflected. *"I do think college years have changed me tremendously. Don't forget that I told you I was always in the last place when I was in elementary and middle school. I was very self-abased at that time. However, college experiences elevated my confidence, and make me expect more of my future. I feel like my ability was neglected for so many years. Finally I realize that life is not only about GPA."* Currently, besides operating her company, Jean also lectures in a private college and a vocational high school. Over the past two years, she has a lot of opportunities working with college students and soon-to-be college students. When asked what suggestion she would give current college students, she answered without hesitation, *"Definitely professional expertise, communication and social skills; plus, critical thinking skills and problem solving abilities,"* she answered.

Expertise in the Professional Field

She shared an incident that took place in her senior year when she was visiting Zhiangxi, China as an exchange student. They were on a bus tour on a field trip. One of the seven Taiwanese exchange students was having bad stomach pain. After taking over-the-counter medicine, the situation was still pretty bad. The university she went to for the exchange program was the Chinese Medicine University in the province. When the other students learned about the stomach situation, they offered a solution by finding some 'random herbs' that they found in the bushes beside the location. She remembered that they were all suspicious about the 'treatment' these new friends offered. *"We were like, 'Are you serious? Will this really work? What if this is poisonous?' But they seemed to know what they are doing. As my friend was still hesitating*

about whether to take the 'treatment' or not, one of them said something that I will never forget. He said, 'Eat it, I guarantee you that it will work! Come on, this is what we are studying! We know what we are offering.'"

She repeated what that Chinese friend said, *"'this is what we are studying, and we know what we are offering.' You don't hear that confidence from Taiwanese students at all."* That was the first time Jean went abroad, and the Chinese college student's confidence undoubtedly surprised her. She reflected on her own education background and numerous conversations she had with her students and classmates; she thinks Taiwanese students are very lacking in confidence, and the specific skill set, or expertise, that makes them consider themselves as professional. After that, she said:

> *Now I tell my students to find out what their passion is, and do the best on them. You really don't have to be the best on every field, but you need to shine with the best skills and technique in the field. Take me as an example, when all my classmates were busy passing the certificate tests on child care sitters, I did not care about it at all. I knew that my passion was on children's music. Instead of spending NTD$2,500 (USD$83) on taking that test, I decided to play big. I prepared for two years, and spent NTD$25,000 (USD$830) and got my Audio Engineer Certification. I am the only one with this international certification in the university; even my professors did not pass it. That's what I would call expertise.*

Communication and Social Skills

The other significant skill she thinks students should build in college years is communication ability. She explained,

"I feel like a lot of Taiwanese students hesitate to express themselves. Simply put, many students don't think clearly, don't know what they really want and can't express clearly. Communication is absolutely important it's everything one needs to have in succeeding in the real world of work. I think most Taiwanese students are too naive and obedient. They can't think through and can't express well."

Based on her experience, she thinks the best environment to cultivate such skills is learning through leadership opportunities in student organizations. She considers extracurricular engagement much more practical and beneficial than pure knowledge and theories in the classrooms. Furthermore, social networks often emerge from in-depth involvement in these activities and organizations.

Problem Solving Abilities and Critical Thinking Skills

When Jean looked back to the route that took her through entrepreneurship, she realized that the mindset and determination to overcome problems and challenges is extremely critical. *"I don't think entrepreneurship is for everyone; however, the determination and ability to get around obstacles to reach the goal is essential for anyone who wants to succeed in her career,"* she said. In her experience, problem-solving ability is the accumulation of the senses and skills gained from event planning, coordination and cooperation with other participants. She thinks college students should take opportunities in studenthood to practice these skills.

Dream Bigger and Go One Step Further

"The enjoyment through my overall college experience makes me think differently about learning. Growing up in Taiwanese education system, I used to believe that only students with good grades could be outstanding. Now I realize that once you find 'your thing,' it is possible to be outstanding in the field that you are passionate about," she reflected.

Jean's experience is encouraging; especially for college students and educators that do not want to "get done and get a job." With a clear vision of life, there are always surprising opportunities waiting for them.

CASE TWO: ANDREW LIN

I met Andrew in a huge educational entrepreneur showcase in Taipei in 2017. His team had an expo stand in the center of a big conference room. I was attracted to their stand because their sign caught my attention; it said ,"Come explore the numbers living in the chocolate bar!" With a sense of curiosity, I walked toward their stand; the meanwhile, Andrew, along with three other young gentlemen approached to greet me, and then started to explain their project. Soon after, they began to tell me about how they started this math education project targeting on middle school students and their profound startup story. I was very impressed with their passion toward math education, and the courage that took them onto the entrepreneurship journey. A few days later, I invited Andrew to participate in this research. He agreed immediately and added, *"I guess I would have a lot to say about my journey as an young entrepreneur."*

From 2015, Andrew has been the CEO of an educational organization, *The Life Education Studio.* 2015 was also the year Andrew graduated from the university. The first year after he left college campus, he was a math teacher in a high school. Everyday after he got off work, he and two other colleagues actively planned for the new business. One year later, he decided to quit his position in the middle school and focus on founding of the business. In 2017, he applied and got admitted to a graduate program in the special while expanding the studio. The studio's main operation has two main folds: connecting students with the school curriculum, and training teachers for renovated pedagogies that facilitate students' active learning. The studio is frequently invited by middle and high schools teachers to provide related workshops. Besides collaboration with schools, the Studio also holds workshops and courses that are open for public attendance. Andrew's job as a CEO requires him to handle the organization's daiy operation,

staff and financial management, and the maintenance of public relationship. Andrew said, all these are brand new tasks for him.

Career Trajectory

Andrew attended one of the top normal universities in Taipei, majored in math education. The main purpose of the university is to train middle and high school teachers. Andrew planned to have a career in the education field when he was still in high school. Identified as a gifted student in the high school STEM gifted class, he met great mentors that provided opportunities for him to undertake his own mathematics research projects, which was very rare for Taiwanese high school students. The pleasant experience encouraged him for considering math research and math education as his career. As a result, he applied and was admitted to the math education department in the normal university, which suited his passion well.

Path to Entrepreneurship

Identification of the need/market

The trigger that pushed him to start the entrepreneur was the conversation between he and his high school students. He remembered his students would ask him questions like: *"Mr. Andrew, are you out of your mind? Why do you major in mathematics? It is so useless." "Mr. Andrew, can you tell me why I am learning chemistry/physics/history, etc.? I don't see any use of if after I graduate from here."* The interactions inspired him to create "something" that may inspire students' learning motivation for learning. *"I started to ask myself: how can learning experiences be a bit different, that students may find the connection between the knowledge and the world they live in? Learning should be fun!"* With the intention to "make learning a fun thing," Andrew and his colleagues started gathering information and networks, along with resources, for this new project.

Supporting resources

The idea of starting the Studio rooted in the junior year project and his volunteer experience. And interestingly, both the project and the volunteer opportunity were related to an important mentor: Professor Ho. "I was very lucky to have a great adivor in the university. Professor Ho was the key person for making all things possible," he said. Professor Ho was his junior year project advisor. She was the one who encouraged Andrew to expand his idea, and to consider the entrepreneurship option. *"I never thought about self-employment before. I knew that I will be in the math education field; somehow she made me believe that I could go further, in a different route."* Professor Ho did not only encourage him, she also connected Andrew with other influential figures and resources in the field. These resources and networks were critical as Andrew and his colleagues were founding their new business.

College Experiences that Enhance Employability

Volunteer and Internship Experience

Starting from his sophomore year in college, Andrew was invited by his high school teacher to go back and help with a new-featured STEM project for high school students. Not only to design the programs, but also to test, modify, and teach the designed program in classrooms. *"I remembered going back to my high school several times a week. In the meetings, I would discuss the project with my previous teachers like we were colleagues, and in the school like a real teacher would do. That was definitely an exceptional opportunity for a college student like me,"* he reflected. Particularly, the interaction between him and the students inspired his passion on education, also intensified his motivation for searching an alternative path for Taiwanese school math education.

In addition, the half-year internship, and a full year as a math teacher in a high school also changed his impression of what educators' capabilities. *"I was so impressed of how talented and creative some current math teachers are. They are really not the traditional kind of old-fashioned prude I though I would find on campus. Instead, many of them are really trying to find a way out for students,"* he reflected what he saw on the high school campus. However, his observation also introduced him to the hard reality facing many teachers. *"The pressure current teachers are bearing is unbelievably heavy. Now I totally understand how a passionate educator could be consumed and burned out,"* he sighed. As a matter of fact, this is also one the reasons he wants to change his professional track from a school teacher to a freelance educator.

Faculty Interaction

When he identified the key elements that he found helpful in forming the entrepreneurship project, he first mentioned the support from Professor Ho. Professor Ho is a respected math education expert in the field, who also happened to teach one of the core courses in Andrew's program. *"I am very lucky to have met her in my life."* Andrew took Professor Ho's math education pedagogy class in junior year. When Andrew presented a creative math education project, intending to connect young math learners with math theories presented from textbooks, Professor Ho was impressed with his idea. She encouraged him to expand it, get it written down as research paper, and even encouraged him to present his ideas in academic research conferences. In fact, the idea turned out to be prototype of the business projects that he is managing in the studio now. *"I was just a college student; to be honest, comparing to many educators, I knew only a little about math education. Professor Ho was very brave to push me to the front and gave me a soapbox for me to sell my ideas,"* he said. I was curious if this is the way Professor Ho used to treat all his students, and Andrew said, *"Well, not really. I remember*

hearing her criticizing one of my classmates project and said to him, 'This will not work. Are you sure you want to be a teacher? You might want to pick another profession.' This was how direct her comments could be. I appreciate that she acknowledged my effort and talent, and gave my opportunities to fulfill my passion and potential," he reflected.

Interestingly, Professor Ho's husband was the project coordinator of the high school featured STEM project that Andrew involved in. *"I guess I am just too lucky to have both of them as great mentors in my career,"* he said. The professor couple connected Andrew with other math education scholars and practitioners in the field, as well as providing him with numerous opportunities, including revising the high school math textbooks, connecting him with funding resources, and allowing him to demonstrate his ideas in different revenues in order to get other opportunities and resources. On Andrew's entrepreneurship journey, professional network supports from experts made a huge difference.

Additionally, the relationship between Professor Ho and him allows him to imagine what kind of "grownup" he wishes to be when his time comes. *"She is a role model to me. Her guidance prepared me for situations that I am facing in future, and taught me how I should stand firm and keep fighting for a better world."*

Student Organization Participation

In addition to his intense involvement in the projects mentioned above, Andrew also took part in The Model United Nations (MUN) student league, as well as the craft club, in college years. For him, student club engagement was not his main interest in university, so he did not take any leadership. However, he considers it as a great chance to build up social networks with people from various backgrounds. *"I think it was an important experience for me. Student organizations in universities carry light financial burden, and are operated with high energy and*

specific goals. For me, I enjoy knowing people from different backgrounds. Getting to expand my

relationship, and knowing different ways of achieving goals...etc., these all enhanced my general

competencies over the four years," he said.

Influential Courses in Universities

When I asked what academic experiences contributed to his overall competence in his

current position, Andrew mentioned a few courses that he considered helpful in professional

knowledge. These courses include Education Pedagogy, Educational Psychology, and Curricular

Theory in Practice. However, the most impressive and influential course for Andrew, the one he

claimed to "push him out of my comfort zone" did not belong to the department core course list.

It was The Quality of Media in part of the general education courses. *"The reason I highlighted*

this course was because I realized there was something changing in me when I was engaging of

the course... I believe this is what higher education should be like: pushing young people to

challenge the norm or routine, then encouraging them to facilitate change from themselves," he

said. The instructor set high bars of expectation toward students' participation. All students are

asked to present self-selected group project themes that required them to practically participate in

the education process, either by designing an education media, or interact with students, or even

actively propose to the media business.

As Andrew said, the course progressively pushed him out of his comfort zone, challenged

him to question the unquestionable and change the unchangeable. *"I think the changed mindset*

pushed me to leave my own little corner, my little mathematical research or whatever corner I

hided in, and dared me to ask myself what I could possibly do for the community." Through the

journey of 'stepping out', Andrew realized that: change is possible. In fact, changes are waiting

to be facilitated by active agents. "Many people think math as a profession can't do anything,

they are wrong. Anybody with the intention for change can be leading a revolution of his own kind."

The Difficult Reality

However, Andrew thinks not many people are able to keep up their original idealism after stepping into the world of work. "*In my internship year and the year as a high school teacher, I realized how hard a young teacher works in order to keep up with expectations and numerous evaluation coming from all sources. It is so easy to compromise!*" What Andrew said is true. Compared to other professionals in Taiwan, licensed regular teachers are paid relatively higher than starting young professionals; the level of stress put on them is heavy as well. Pressure from the ranking system, numerous "helicopter parents," and tedious administrative responsibilities gradually drag young teachers down. "*Not many young teachers were able to keep up with their educational idealism. Gradually, young teachers; consciousness over the ideal education gets diluted and put in the back of the endless to-do-list. As a result: they are 'normalized'*," he said.

Not only for high school and middle school teachers, higher education educators are facing the same problem. Andrew reflected on his college classroom experiences and sadly admitted that only a few professors really knew how to, and wanted to, interact with their students. "*I mean we are a normal university, intending to teach young people to be educators. What good would it bring if the teachers in the universities were not interested in interacting with these future educators? What kind of teacher training program is this?*" Through his four-year experiences sitting in the classroom, he realized that not every instructor was capable of taking students out of the classroom to facilitate change. "*How can you ask someone who only know about math theory and his research to show the passion they don't have, and expect them to inspire their students? There must be something wrong with our teacher training program.*"

Andrew thinks it is the same passive attitude that discourages young people from trying

out their entrepreneur ideas. He said:

I feel like one of the most important internal forces that drove me to step in the

entrepreneur journey was the consciousness to identify problems, and the courage and

passion to take up the responsibility to change the situation. The support from an

engaging mentor was there to maintain and heated up the passion of mine, and extended

the supporting network for the passion; as a result, my idea grew into something..

Without actively engaging the students themselves in the learning process, I think higher

education fails one of its original purposes, which is serving the community.

Attributes and Ability Needed for Entrepreneurship

To Andrew, staying in the education field was his original intention regarding his career

planning; however, entrepreneurship did not come to his plan until he met Professor Ho in junior

year. The courses he took mostly were about math education theories and practice, nothing was

related to business and management. Looking back to the entrepreneurial journey, he indicated

three attitudes, or abilities, that he considers as most critical along the route. *"They are*

resiliency, communication, and expertise of education pedagogy," he concluded.

Resiliency

"Self-employment is a huge package of responsibility that does not come with the sense

of security," he teased. As his own boss, no one wires monthly wage to his bank account every

month. *"The financial burden is a brand new pressure for me,"* he said. As the cofounder of the

company, Andrew constantly needs to deal with abrupt situations and unplanned crises, and all

these come with various levels of stress. *"I think over the past year, my heart grew stronger,"* he

laughed. For Andrew, resilience refers to the unbeatable attitude needed to break through

obstacles in the way to business success, and the full independence needed for mature decision-

making. *"For me, class engagement back in university did not help much; it was the extra*

curricular activities that significantly rooted my foundation for coping with pressures," he said.

Communication

Communication skills include presentation skills, and the ability to conduct positive

interaction between people. *"I can't say enough about the importance of communication skills,"*

he said. First, he talks about presentation skills. Andrew's job requires him to talk all the time,

either in workshop lectures, or in the business development meetings. *"I think good presentation*

skills is the powerful currency in this field. If you can't get people to hear what you say, and buy

your idea, you are done," he said. Andrew thinks his college experiences progressively

contribute to his building his presentation skills through many project based presentation

opportunities, and internship/volunteer engagements. Additionally, another aspect of

communication is referred to the effective interaction between people, especially with colleagues

and customers. *"In the education field, a lot of time the quality and depth of relationships would*

decide how far your project will expand and how successful it will be. Learning to 'do business'

in the right tone and professional attitude is something I am still learning now," he said.

Expertise

In the education field it is the depth of knowledge and the practical pedagogy that really

attract audiences' attention. When Andrew started the Studio, he simply wanted to find

alternative approaches that could connect students with the knowledge body. After he stepped

into the field, *"I realized that I don't know enough. As I was starting to dig into the field, I found*

that there were a lot more that I need to explore and make it work in the classroom," he said.

This is the reason why he is pursuing graduate degree in education, and participating in numerous training and educational workshops to equip himself with professional knowledge and skills. Andrew thinks the accumulation of education and knowledge is critically important in the education profession.

Expectation of Taiwanese Higher Education

As asked about the purpose of higher education, he first said, *"Well honestly, I do not think higher education should serve purely as job preparation. Maybe I should put it in this way: I think currently most universities are trying to fulfill the gap between campus and workplace; however, I don't think the responsibility falls only on the career center staff. The whole campus, especially faculty members, has critical influences on students' career development as well."* Andrew thinks that universities should take more responsibilities on enabling college students to actively use their knowledge and skills to solve the problems facing their communities. At least, college graduates should have the basic ability to communicate and interact with other community members, to blend in, and to make changes happen. *"Basically, this is also what I am trying to achieve in my studio and whatever I am working with students."*

Andrew thinks one main purpose of higher education should be preparing research scholars, especially for students who plan to go further for academic pursuit. Other than that, for students who do not wish to attend graduate schools, having a set of specific skills and the knowledge of that industry will be crucial for the transition to the professional career.

In Andrew's freshman year, he was surprised to find that many of his classmates were not good at math, nor even enjoyed learning math . Since the university Andrew attended was one of the top public universities in Taiwan, the fact he mentioned was actually a surprise to me. He

explained how the way college program placement system brings such an irony. In Taiwan, high school students take general college enrollment tests, and then are placed to various college programs mainly according to the test score, partly according to their wish list. As a result, many students end up enrolling in the majors that do not fit their best interests. Take Andrew's major as an example, the group of young people have a good chance of failing the hard-core foundational math theory courses, and would need to retake the courses in the ensuing years. That explained why more than one third of his cohort classmates needed to defer graduation for one or two years. Some could not even finish the program in seven or eight years. That is not just extension of college years; it is also a misuse of time and energy in one's most productive years in life.

Andrew said, *"I think it is related to the 'all you can play' mindset. I have many friends that do not care about their grades and learning at all, because they don't take college education seriously and do not acknowledge its value. I do think university should blend career planning into general education or even department core course requirement to help students get prepared',* he said.

Lastly, he stated what he thought ideal higher education should accomplish:

I think four years in university should make a young person a professional of a certain field, that he or she has enough knowledge and his own opinion regarding the trend and problem facing the field. I believe higher education should be an important preparation for talents needed for the knowledge economy and the growth of new technologies.

For Andrew, he considers his previous higher education experiences as 'satisfied'; however, he also thinks Taiwanese higher education system should reconsider its specific goals to prepare for the challenges, especially regarding how the students' overall education experiences should make graduates more competitive in the global market. CR

CROSS-CASE DISCUSSION:

COLLEGE EXPERIENCES AND YOUNG ENTREPRENEURSHIPS

As discussed in the previous section, more than half of Taiwanese college students consider entrepreneurship as their career option. However, as many are thinking about it, not as many really pursue their dream. The two participants' experiences pointed out significant influences in turning their careers toward self-employment, and indicated some profound higher education experiences, as well as the unfulfilled expectations.

College Experiences That Enhance Entrepreneurship Potentials

One of the main research questions of this study is to look for positive college experiences that enhance graduates' employable ability and attributes. The two young entrepreneurs' backgrounds pointed out several strong elements that are invaluable in the cultivation process, that including campus resources, faculty support, professional expertise buildup, and leadership opportunities.

Campus resources and faculty support

1. Influential faculty members. The success of a new business critically depends on a profound (and broad/extensive?) social network. For young people who do not come from business family backgrounds, standing on a giant's shoulder could save them countless efforts. For both Jean and Andrew, supporting mentor-mentee relationships emerging from college courses or project formation carried them a long way. These impactful relationships started from the acknowledgement of college students' talents and ability; with the students' progressive attitude and ambition, the positive relationship further extended to connections with external resources and networks. In these cases, mentors and the young entrepreneurs were like-minded

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people. They cherished each other, and made the most of the relationship as it contributed to the expansion of the growing business. For young people with entrepreneurship potentials, an experienced antecessor would open their doors to the field, and introduce them to other influential figures that might bring useful resources for enhancing the development of the new organization.

2. Administrative support. Jean's case indicated a great example of how campus atmosphere and administrative support effectively encouraged the birth of young entrepreneurship projects. As a matter of fact, the Taiwanese government established several guidelines and promotional policies in order to encourage college students to turn their projects into entrepreneurial endeavors. Supporting university administrative system could effectively connect students with these resources, remove the psychological and financial obstacles that hinder students from testing their ideas.

Professional expertise building: theoretical and practical

Most entrepreneurs start their projects small, with a prototype that was not even aimed as business. The two participants both had great extracurricular experiences that built up their profiles in the areas they later pursue in their careers, either through student organization involvement or project-based volunteer experiences.

1.College hands-on projects. Interestingly, both cases stress on the role of the sophomore or senior year project requirement, and used them as the prototype of their future business modules. These college year projects have the potential to go really far with appropriate guidance and resources. This is especially the case for projects that intend to fix real-world problems facing the fields. Both Jean's and Andrew's experiences point out that serious

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engagement in these project-based learning can really pay off, for it carries the opportunities for turning their school assignments into business ideas.

2. Knowledge and practical experience in the professional field. Not all degrees count the same. To excel in the economy, especially for young adults thinking entrepreneurships, in-depth knowledge and hands-on practical experiences in the field are critical. The expertise could be built upon professional certificates, participation in contests and accreditation from awards, real-time projects that are practically impacting people's lives, and many other various opportunities. Extracurricular projects not only add another impressive line on recent graduates' resumes, they could be productive and significant in expanding graduates' and young entrepreneurs' professional networks that allow them to obtain useful resources in the future.

3. Useful courses and research opportunities. As many college graduates express how 'useless' college courses could be, entrepreneurs, especially those who start business in their own professional fields, would state differently. Both self-employed cases in this study named only two or three courses, among over sixty courses in four college years that they found useful in starting their business projects. In the "all-you-can-eat" type of college curriculum, if college students can be guided to figure out their strength, potential, and interests in college years, students could better take advantages of the professional courses and resources that are accessible on campus. The key is the depth of knowledge of the area these future entrepreneurs dig in, and the connection built through interacting with faculty members and other significant roles in the learning process.

Leadership Opportunities

Entrepreneurships contain a heavy part of independent decision-making, critical thinking, and communication. In most of the case, young entrepreneurs take on heavy responsibilities in leadership and management roles, with a team or without. Leadership opportunities in college years serve as essential training and practice, for cultivation professional attitudes and abilities regarding organization management, strategy planning, and decision-making. Student organizations, student government, or in-depth volunteering experiences contribute to the holistic development of college students not only in their need for social connection, but also expand their leadership capability that is essential for future entrepreneurial opportunities.

Support Needed and Strategies for Helping Young Entrepreneurs

Compared to other graduates, graduate entrepreneurs tend to be relatively clearer about their strength and future career options. However, as in the transition period, namely during their senior year, potential entrepreneurs encounter pressure and the doubts equal to students who are looking for positions as employees. Moreover, they are facing even higher level of pressure and heavier responsibilities that come with complicated tasks. Obviously, more support is needed to strengthen young entrepreneurs' passion, skills and energy for this new chapter of their career. In the interviews, some missing elements in college experiences were mentioned regarding sustaining student entrepreneurs' expectations and meeting their needs.

Career Counseling Resources

As neither of the two participants mentioned receiving support and information from the career service department, the potential support from such professionals is left unknown. As a matter of fact, in terms of career services Taiwanese universities have too much in their basket of

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lists but not enough energy and resources to meet all the need. In addition, Taiwanese students do not tend to use "professional services" on campus, like career counseling; instead, they refer to personal network. Globally, as many universities now provide resources and support toward students with intention for starting their own business by establishing innovation and entrepreneurship centers or departments in cooperation with career services, most of Taiwanese higher education institutions are falling behind the global trend to fulfill the students' needs.

Funding Opportunities

According to the National Development Council of Taiwan, four things are lacking in Taiwan's startup ecosystem: access to seed stage funding, the right connection and market resources, a legal system that is startup friendly and the conditions to attract enough foreign talent. As for the university, one of the most important roles to take in pushing entrepreneurship to thrive is through connecting students with resources, particularly funding opportunities, available for startup companies.

To conclude, young entrepreneurs need all the support they can locate to make a breakthrough dealing with the hardship facing them in the business world. Taiwanese higher education institutions are still looking for a feasible approach to reach out to these brave minds, and an effective way to support them financially, emotionally, and professionally. There is much more to be done.

Chapter Eight:

Research Findings and Discussion

College graduate employability and entrepreneurship have been a global concern for the past few decades due to its immediate impact on the economic competitiveness of a nation. In Taiwan, particularly, with the universal higher education system that produces over 240 thousand college graduates every year on an island of 23 million residents, the overall economic strength of the country is profoundly determined by the quality of higher education that students receive and the preparedness of recent graduates. Furthermore, in 2018, Taiwan's Ministry of the Interior announced that Taiwan had officially entered the stage of an "aged society" as Taiwanese people over 65 years old accounted for over 14% of the country's total population. The graying society is adding the burden of caring for the older generation to the state, also pushing young people to bear the financial responsibility over the tremendous government-funded health insurance and pension cost. Moreover, Taiwan's current economic and political development is now trapped due to forceful political pressure from China, and its own weakening economic policy. In this difficult reality, Taiwanese young people are also facing competition from a fast-growing global market that is forcefully pushing to open Taiwan's economic gate. The challenge facing Taiwanese graduates is harsh, which make the examination of higher education quality and college graduates' career readiness or employability a critical and timely task.

While most Taiwanese employability research cuts through employers and educators' perspectives, students and graduates' voices are almost silent in the literature. Thus, this study intended to investigate employability building effectiveness as perceived by recent Taiwanese college graduates, particularly in regards to their college experiences. The eleven participants recruited from various professions, disciplines, types of universities, and geographic

backgrounds reflected on their respective college experiences, and carefully examined how certain activities or engagements adequately directed their skills and attributes to help them flourish in the transition from campus to workplace, as well as the experiences that failed to meet their expectations for their perceived purposes of higher education.

In this chapter, I will return to the research question with the experiences and reflections shared by the participants by examining how graduates perceived college experiences contributed to employability building, identifying the gap between workplace and classrooms, and identifying feasible solutions to the problems.

Connecting College Experiences With Employability Building

To answer the first research question regarding identifying the existence of the gap between college experiences and students' employability building, I examine recent graduates' perception of the curriculum, extracurricular activity engagement, work-related experiences, and career counseling services and discuss how the identified gap could possibly be addressed.

College Curriculum

Ideally, a college curriculum [at least partly?] should be closely linked to the acquisition of professional knowledge and skills. At the minimum, students select their majors with the expectation to learn about the specialized field of studies. However, when the research participants reflected on their previous classroom learning experiences, only a few reported positive feedback. Many graduates indicated the existence of a gap between perceived learning outcomes from their previous classroom experiences and the knowledge and skill sets that are needed in the workplace.

The "usefulness" of college curriculum

On average, Taiwanese college students need to complete 140 credits (ranging between 128 and 175 credits) to fulfill graduation requirements. In terms of courses, most college students take more than 45 courses over four years; for some programs, students might take more than 60 courses. The course load that many students take on is significant; students in double degree programs and/or who take on additional certificate program requirements experience an additional burden. However, when participants were asked to identify courses that genuinely enhanced their professional knowledge and skills, or enhanced their career readiness, most participants only named a few.

Courses that impressed graduates and were considered as "helpful" had a few special or unique features, including incorporation of project-based learning, hands-on practice, peer-learning, explicit and intensive requirements, engaging course instructors, and content that corresponded to students' interests and needs. In contrast, courses that were considered the [most useless or "less" or "not very" useful?] included large lecture classes with a single-approach evaluation of written examinations, mandatory courses (like English, Mandarin, Military, etc.), and courses with loose [??] requirements and low student participation.

Criteria that graduates research participants used to assess courses as useful did not only relate to career preparation. Instead, class experiences that inspired them to actively participate in the learning process, course contents that connected to real-world work needs (research, industry trend, and problem identification and solution), and introduced professional and generally transferable skills were highly acknowledged by recent graduates. Interestingly, many graduates eventually further pursued professional careers or entered the academic areas that were closely related to the courses that impressed them.

The quality of teaching

One significant factor that affected students' learning outcomes was the quality of teaching. It is ironic that, while K-12 teachers need to acquire teaching certificates and complete pedagogical preparation through teacher education, no mandatory higher education teacher education exists. Some graduates expressed their dissatisfaction regarding course instructors' lack of teaching skills and passion towards students' learning. In fact, this is possibly a consequence of the recent Taiwanese higher education renovation strategy. The Taiwanese Ministry of Education undertook new strategies to push Taiwanese higher education institutions to pursue world-class research excellence, which essentially changes the hiring strategies of university faculty members to emphasizing research and publications records. The research-centered appointment criteria have brought in new faculty members who have demonstrated advanced research capability. However, this set of qualifications does not guarantee their teaching ability, require their connections or network with industry, nor gauge their commitment to solve real-world problems with their expertise. As some of the participants pointed out, many of their professors only care about their own research; they do not care about effective teaching methods, nor understand or care about the communities' [and companies'] needs. The compromise of teaching quality over the emphasis on research has a real negative impact on the higher education scene.

What is being taught? The curriculum content

While participants expressed contradictory opinions over "how connected" college curriculum and industry needed skills should be, what may be necessary to acknowledge is that finding a balance point that pleases everyone is not a realistic expectation. Depending on students' various career plans and interests, some students hope for solid training on practical

skills that could be used in their future workplaces, while others might set learning goals toward further academic pursuits that may require additional coursework and in-depth study.

In this study, all participants went (more-or-less) directly into employment or other roles in the economy after graduating with their bachelor degrees. And most of them did not perceive the link between curriculum and their job needs to be adequate or satisfactory. In more succinct terms, many participants considered that disconnect between their classroom college education and realities of the workplace were not merely "insufficient" but rather a huge gap. One alarming fact points to the significance of this dissatisfaction: the enrollment numbers for graduate programs has been steadily going down since 2010 (MOE, 2018), mainly because having a graduate degree no longer affects a starting salary as much as before. Simply put, in Taiwan at least there are more college graduates directly stepping in the world of work than ever. Therefore, the need to reconsider how the gap between curriculum content and the workplace could be bridged or mindfully addressed is timely and urgent.

The research findings point to a deeper yearning that is not satisfied within students. While graduates described the existing gap, they were not merely referring to the knowledge or skills learned that lag behind current trends. The main issues lie in the disconnect between the purpose of a college education and the knowledge and skills obtained. In other words, most college students cannot identify why they are learning theories and knowledge of certain areas when they are sitting in the classroom. Even for those who end up choosing career paths that are closely related to their college majors, many cannot relate the course contents to their occupational practice.

The problem could be double-sided. As mentioned earlier, many instructors do not have experience or connections in industry or other employing organizations; for them, tailoring the

application component of theories and knowledge is not of their concern (or one of their strengths). As for instructors who intend to introduce the connection, the absence of students' readiness is another factor that hinders the learning outcome.

By all means, higher education should not be solely serving as the production line of needed positions in the economy. However, higher education does bear its unique responsibility in supporting young adults' developmental needs, and one important development need is to explore – and prepare for – career options. A more robust career guidance/coaching system in the university program level will help to ensure that every student is given sufficient information, accessible resources, and personal guidance in college. Such features – as well as focusing on more workplace-relevant knowledge and skills in courses – are crucial and critical in this career-determining life stage for college students.

Faculty interaction

Related, but not limited to the course content, Taiwanese graduates would benefit considerably from positive in-depth interaction with a faculty member. One important distinction between higher education institutions and other education agencies should be the expertise, research or practice, and network resources that faculty members bring with them. Faculty members, as in their professional area, ought to be the contact point regarding knowledge, skills, and the professional network for their students. From some of the research participants' experiences, supportive college mentors made significant differences at the time students were looking for career advice; they were able to reduce anxiety due to students' transition, provide information and resources in the decision-making process, and practically connect graduates with suitable employment. Interestingly, for those graduates who felt they had received support from their 'mentors', none of them referred to their own program- assigned advisors; instead, all of

them identified and started building further connections with faculty through class interactions. The beneficial interactions mostly started from discussions over a course-required project or participation in a professor's laboratory, which resulted in positive interactions that would endure for years and support the graduates a long way. Graduates also reported that their mentors not only provided career development resources, but also acted as their role models when they were searching for their own unique identity and their positions in the world. A mentor not only brought in resources, they also fulfilled college graduates' needs in time of considering career options.

As for the other graduates who were not as lucky to have an identified mentor, they were essentially on their own (including their family and peers?) when it came to career decisions. As the research participants reported, most Taiwanese college students do not actively reach out to faculty or assigned advisors when they need career decision counseling. First of all, for faculty in Taiwanese universities, in addition to the research and teaching loadings, they also have various "service" obligations; one of them is advising students. With the overall heavy workload, usually faculty would hold a group mentee lunch meeting once per semester. For most students, this is the only time they interact with their advisors. Additionally, not all university professors are professionally equipped with the ability to guide students through their developmental needs, and perhaps particularly in relation to employment or entrepreneurship activity. Secondly, many students' mindset keeps them away from actively seeking support from faculty. Teachers are highly respected in Asian culture; however, the traditional Asian teacher-student relationship framework has strict distinctions between the two groups. Most students do not feel comfortable approaching the teachers in times of need. As for the way to enhance the relationship, more will be discussed in the later suggestion section.

General education courses and course selection flexibility

Some of the research participants shared their appreciation of the general education requirement that pushed them out of their comfort zone to expose themselves to new fields. Many found the discussions that occurred in these general education classes left a lasting impression on their lives and provided alternative perspectives. Moreover, some mentioned that they appreciated the wide variety of courses and the skills obtaining opportunities offered through college courses, especially after they realize how expensive individual course could be after they graduated. Besides, in many general education courses, students are asked to work with others from different disciplines and background. Interactions from interdisciplinary discussions and project implementation experiences enriched their teamwork ability, and allowed them to exercise alternative thinking styles and perspectives that they found useful in their professional lives.

The "all you can play" mindset

After all, the research findings call attention to how the "all you can play" mindset is devastating college students' general learning outcome. Either from their own experiences, or through observation of peers in their cohorts, many graduates indicated that few college students were diligently studying; most students did not pay enough attention academically. Improving teaching quality and curriculum effectiveness is important, yet college students' readiness to learn is another significant factor in building competence. Additional discussion on feasible approaches for enhancing students' learning motivation will be brought up in the later section.

To summarize, while professional curriculum should be the pillar for gaining skills and knowledge in a college atmosphere, Taiwanese college graduates expressed dissatisfaction towards the teaching quality, curriculum content, and the learning outcome. For many graduates,

they did not have clear expectations for what they planned to learn, nor were guided through the learning process to better fit their learning interests and career development needs. Both the university and students' college learning readiness need to be significantly improved to keep up with what is required in the fierce global labor market competition.

Extracurricular Activity Involvement

In this study, extracurricular activities refer to activities pursued in addition to the normal course of study within or outside of campus during the college years. To feature different attributes, work-related experiences like an internship or part-time jobs are discussed in a separate section. To begin with, the research findings point out that graduates highly value their student organization and volunteer engagements; some even referred to them as "the most valuable investment of time and effort" in college.

Benefit brought by engaging in extracurricular activities

Graduates laid out several skills they obtained through engagement in such extracurricular activities. First of all, many graduates who took upon leadership roles reflected how these opportunities allowed them to shape their leadership skills in real circumstances. Leadership training fits closely to the objectives of higher education for community leader cultivation. Most Taiwanese higher education institutions have abundant student organization options for students who are willing to invest time and energy, and students can take advantage of the many existing opportunities for leadership roles. In fact, employers strongly favor graduates with experience in previous leadership roles; records of leadership on their resumes can help them stand out among the sea of applicants.

Additionally, graduates reflected on their experiences and indicated that extracurricular activities sharpened a number of skills and abilities, as noted in greater detail below:

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- People skills and communication capability. No matter what professional areas graduates worked in, the ability to get along with colleagues and supervisors heavily affected graduates' perceived level of success during transition. Recent graduates reported that they were surprised to learn how important communication skills play in the workplace. In workplaces that demanded heavy teamwork, graduates with great communication and people skills easily stood out in the initial phases of the work process. They tended to have smoother relationships with the colleagues around them, were positively acknowledged by supervisors, and were more attentive in moving onto the leadership track in an office. With previous experiences in student organizations and volunteer experiences, graduates learned to communicate, negotiate, compromise and create a positive work atmosphere that is needed to bring out constructive outcomes. On the other hand, graduates without these skills or experiences stated the difficulty in initiating and handling relationships in workplaces.

- Organization skills. Through engagement in extracurricular activities, college students frequently were involved in event planning, logistics management, and other administrative tasks that helped them build up organization skills and problem-solving abilities. These hands-on experiences in an encouraging and tolerant environment allowed college students to gain capability through trial-and-error process at low social and organizational cost. Some graduates shared that the skill set fits the day-to-day office operation need that is required.

- Collaboration skills. Teamwork has become the norm in many fields; thus, the ability to collaborate with colleagues and agencies has become a basic qualification for most

positions. Many graduates who participated in this research indicated that their previous involvement in student organizations and the skills obtained through the experiences were transferable to their workplace needs. Although the workplace culture are sometimes more complicated than in school, still, students with such backgrounds demonstrated an easier transition to the new phase of life.

- Time (and stress) management. Many participants indicated that they learned time management with multiple commitments, especially during busy final examination times. Related to time management, some graduates thought they developed useful stress management strategies through either the activities themselves, or through practically coping with stress in limited time.

- Network and resources. Some of the graduates received job offers through direct involvement in or indirect networks from previous extracurricular engagement. The power of network practically saves a lot of career transition hazard for young graduates, especially in their first position.

Almost all professions require the attributes listed above; at times, they are even more pivotal than professional knowledge and skills. Additionally, many participants mentioned the long-lasting friendships they developed in student organizations or through consistent volunteering experience. This might not be relevant to graduates' occupational matters, but the intimate relationships that support young adults through transition times definitely bring benefits in various aspects, even in providing career advice that they hesitate to get from faculty or career centers.

After their freshman year, college students were more likely to be positioned in leadership roles or roles as organizers, and were expected to solve problems independently.

These are the experiences where real learning takes place. One important point reflected through the graduates' experiences is that, these in-depth benefits have its accumulation effects, meaning long-term engagement in the same organization would bring in-depth and profound experiences that can have a positive impact on students' learning outcome.

An area demanding more resources and guidance

With all the benefits revealed above, extracurricular activity engagement has proven to be significant. As perceived by many participants, this is even more closely related to their employability building than their academic or professional curriculum. However, the efforts and resources put in Taiwanese higher education institutions for enhancing the education through extracurricular activity is far from enough. Most people, including faculty and students, still treat extracurricular activities less important than academic pursuit, or even see it as childish play. In fact, with the level of impact and benefits indicated by the research participants, Taiwanese higher education institutions should put a lot more effort on encouraging and supporting and guiding students through the profound extracurricular activity engagement.

Currently, most Taiwanese higher education institutions have student activity divisions for managing student organization affairs. However, most are limited to merely managing but not guiding and counseling students toward addressing their deeper needs. Yet, it is unrealistic to expect a division where staff members usually number less than five to attend to an entire student body's needs. The responsibility of guiding student through these experiences is better holistically supported by the effectively constructed mentor-mentee relationship. In conclusion, Taiwanese universities should emphasize the support toward extracurricular engagement and introduce effective ways to maximize the learning outcome.

Work-Related Experiences

The third aspect of critical employability building through college experiences is work-related experience, including full-time or part-time jobs, internships, apprenticeships, etc. Most graduates with previous work-related experiences acknowledged its positive impact on enhancing their readiness for real work. However, the [level enhancement??] could be very different.

Full-time or part-time jobs

For graduates who previously had full-time or part-time jobs, the main reason these participants chose to work during their college years was due to financial need. Therefore, many worked in areas that were not relevant to their college majors or did not fit with their career plans. However, they still valued those experiences and thought it helped them know more about the workplace culture and build a solid work ethic. Some considered a part-time job as part of the career-exploring journey, which also brought opportunities to extend their network.

Internships

Compared to work experiences, graduates valued the impact of internships even more. Almost every participant that had an internship experience considered it as the closest link between campus and career needs. Descriptions and comments such as "the year most well-spent," "most valuable investment of time and energy," "a career path test-out" and "a must!" tell how critical internship experiences could be.

An internship as part of the career-exploring process actually makes a lot of sense. As mentioned in previous discussion, higher education institutions should not be treated as a career preparation center. Therefore, the purpose of the university years is not to fit graduates into certain positions or professions that are looking for new blood. Instead, higher education is to be more student-oriented by guiding young adults through the process of deepening their knowledge

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and skills as well as finding their interests, strengths, and, some would say, the "calling" in their lives. Through the resources within and related to universities, college students can have many opportunities to "test out" their potential future career possibility. Some graduates shared that they realized that they actually do not like their originally planned track until they were doing an internship. Thus, an internship could either confirm college students' previous assumptions about potential career choices, or make them reconsider their options. Both are could be viewed as positive outcomes.

The benefits internship experiences bring. Graduates named some of the benefits internships bring. These are discussed in detail below:

- Connecting knowledge and practice. While most graduates complained about the gap between workplace and college curriculum, the most critical benefit an internship brought was bridging that gap. Graduates indicated that opportunities to practice and learn skills needed in the workplace provided an advantage that the classroom setting did not offer. Internships also provided time and a space for students to connect concepts and knowledge gained from courses with the real world of work. This type of connection not only improved students' ability, but also clarified misunderstanding and false impression students might have had with their potential future career in the field.

- Building network. Another critical benefit an internship brought to many graduates' career development was the powerful and expansive network it provided. More and more companies tend to hire their own previous interns, based on their demonstrated performance. From the companies' perspective, hiring capable interns saves them lots of resources and money. Industries that are most likely to hire their previous interns include accounting, semiconductors, business consulting, information sciences, civil engineering,

etc. (LinkedIn analysis, 2017) Therefore, investment of time in internships may save graduates a lot of time and energy when searching for a job.

- Acquisition of workplace culture and work ethics. Although internships do not equate to real jobs, many companies and organizations do expect interns to follow guidelines and demonstrate the same work ethic like their own full-time employees. For many college students, particularly those without previous work experiences, some particular job requirements and workplace atmosphere shape their work ethic through colleagues' modeling plus their own reflections, which definitely help them adapt to the world of work more smoothly.

- Career exploration. Other than adapting to certain professions, internships also provide the essential opportunity for college students to determine whether they would take a certain professional path or not.

Enhancing the quality of internships. However, the quality of internship can certainly vary across different students. Some said that their internship experiences were "lousy"; in such cases, they indicated two types of deficiencies: 1) insufficient hands-on practice opportunities, and 2) lack of robust internship plans. Especially for skill-intensive professions, some participants pointed out they were disappointed to find themselves performing tasks that could be done in the classrooms (e.g. discussing research paper with professors), or found themselves as cheap labor fulfilling miscellaneous tasks that the regular staff did not have time (or the desire) to do. In addition, internships that last only a short time, have loose requirements, or lack a good mentoring system could also diminish the potential benefit that an internship brings.

On the other hand, positive internships come with some general elements. First of all, internship as program requirement should be considered more holistically. Educators should

think more clearly not only about the logistics in arranging students' internships, but also consider the purpose of the placement. Internships can maximize their value when integrated with meeting educational goals for different learning stages. Clear learning objectives should be laid out for students, the university mentoring faculty, and the placement mentors. Mindful placement process is needed in order to tailor students' career interests and learning goals with the practicum features. Additionally, instead of merely "training" college interns for demanded skills, in-depth reflection and frequent mentor-intern discussions are essential to fostering genuine learning. As stated previously, higher education should not be viewed as a job training center. An internship, as a hands-on practical learning approach, is also designed to encourage college students' critical thinking and build citizenship. Between theory and knowledge along with the practices in workplace, students need space and guidance to figure out their identity and career path options. In order to reach this goal, additional efforts for ensuring supportive mentoring relationship and internship plans will be necessary.

Emphasizing Career Counseling System

In regards to college graduates' perceived career-coaching needs, participants mostly admitted that they "panicked" over the transitional phase. This corresponds to a study by Tien *et al.* (2005) that reported about two-thirds of Taiwanese graduates were undecided about their career future at the time of their graduation. With the career uncertainty they perceived and career coaching needed, none of the participants in this study approached career centers for assistance. They did not remember being approached by career center staff nor did they know or use resources and counseling service. A few graduates remembered that there were information sessions and career fairs held by their own program, but did not know much about the career center's services. Some graduates thought that the university might already have tried to provide

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support to address graduating students' need, but they were not ready or did not know how to make use of the services.

The cultural context

The disconnect is affected by the cultural backdrop of Taiwan. In western countries like the United States, students at a young age are encouraged, and then it may be required later in life, to interact with school counselors during K-12 education. When applying to colleges, some/many high school students use a lot of counselors' professional advice and support. In Asian countries like Taiwan, many students still think that seeking help from a counseling center means they are problematic students. Moreover, the immense needs of the huge student body on a university campus may not possibly be met by the limited number of staff at the career and counseling center. Obviously, there is an imbalance between students' need and service supplies.

Students' readiness for approaching career services

Sampson *et al.* (2004) defined career decision-making readiness as "the capability of an individual to make appropriate career choices while taking into account the complexity of family, social, economic, and organizational factors that influences an individual's career development" (p. 68). Nevertheless, to take one step back, the first task is to enhance Taiwanese college students' readiness for using career services.

As reported by some graduates, even when they knew career information sessions were provided, they chose not to access the services because they were not ready [or did not believe they would be helpful?]. From the participants' narratives of their life stories and perception regarding their future career plans, it is indicated that Taiwanese college students start considering career options, or further preparing for life after campus, relatively late. During freshman year, the students did not have the motivation to think about their future careers,

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because they had just accomplished their most important academic goal of being admitted into a higher education institution. During their sophomore year, many of them were preoccupied with a heavy course load and leadership duties in student organizations. When it comes to junior year, students became even busier in student organizations, while some of them begin to think about future careers. At last, while graduation is approaching, many seniors realized that it was actually a bit late to start preparing for job applications; or even worse, they were clueless of where to start.

Obviously, Taiwanese college students generally do not recognize the importance of career planning or development, probably due to the lack of independent decision-making experiences in their earlier life events. In Taiwan, students begin to choose and make schedules for their own courses only when they start college. Unlike students in the United States school system, students are used to making academic and career decisions from their interests and demonstrated strengths in certain areas, most Taiwanese college students are not familiar with career-related decision making. Therefore, there is a delay in the level of readiness for "career preparation conversation" among college students.

Tailoring leveled services to meet various students' needs

To fulfill Taiwanese college students' needs in any given circumstances, different levels of career decision-making support should be identified to meet students' needs at various stages. Examples include self-help types of services for students who are capable of self-direction, counseling or coaching services for individuals who engage in negative thinking about academic and career planning, and brief staff-assisted services for students who are almost ready for career decisions, etc. Since it is unrealistic for career centers to meet every student's need, career and

counseling centers should partner with academic/professional programs and departments in order to extensively reach out to the student community.

A possible and feasible approach that could attentively bridge the gap is through modifying the existing advisor system at the program level. Many programs randomly assign faculty advisors to students, and the mentor-mentee relationship usually lasts only for the particular academic year. As a result, students are assigned with different advisors every year. The modified version plans to deepen the relationship by prolonging assignment time period. By the establishment of an advisor-advisee pair according to common interests, and a long-term engagement that last for at least two years, advisors are given time and opportunities to engage in-depth conversation, understand each student's unique need, and earn students' trust. Additionally, carefully selected program alumni could also be considered as potential advisors to provide career counseling. As mentioned previously, any engagement that is limited in scope such as a one-time meeting may not be the most useful approach. Like all relationships, college students need time and space to build trust with their advisors and change the habit of mind regarding approaching the career help that they really need.

Enhancing career exploration opportunities before college

A recent (September, 2018) Taiwanese survey revealed the significant impact of discreet major selection. It reported that only 43% graduates said their first job was relevant to their college majors. This means that nearly 60% of Taiwanese graduates may have considered the professional knowledge learned in college could not be used in workplace (1111 Human resources Bank, 2018). The survey also indicated that more than 70% of Taiwanese graduates would choose a different major if they were given a second chance. 30% of the recent graduates would choose a field with better prospects, or choose majors that they would be interested in

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To push even further, as the survey implies, many participants did not think they chose college majors with sufficient information. For most students who take the regular track to universities (instead of vocational track), they would have spent all three years of high school studying hard to perform well on a variety of achievement tests in order to earn admission to a top university, but they would have only spent less than a month or even two weeks on deciding what career path/ college department or concentration to take. Without sufficient time and opportunities for self-exploration, and understanding of the world of work, it is not surprising to find dissatisfaction in their college experiences or a high proportion of career uncertainty among college students. Solid career exploration programs that can help students know what they want to do and learn should start at a younger age, at least during the high school years. This would give students enough resources and opportunities to understand their potential strength in certain areas, as well as gain up-to-date knowledge over the broad options of university majors.

Understanding Employability in the Taiwanese Context

When it comes to college graduates' employability, the first question most often asked would be: "What attributes or skills are generally needed in fulfilling the job requirement?" This is a reasonable and critical one, given the context of the line of employability research originating from a European research body that focuses on the connection between workplace and higher education. However, after considering the life experiences of eleven recent Taiwanese college graduates, I propose to come up with an updated context and definition for employability to better disclose Taiwanese graduates' transitional needs.

The Asian Work Ethics

Sue and Sue (1999) noted Asian culture with three special traits: deference to authority, emotional restraint, and hierarchical family structure. These traits are based on the general Chinese culture's emphasis on collectivism rather than individualism, conformity to norms, emotional self-control, and family recognition through achievement, filial piety, and self-sacrifice. Overall, Chinese culture tends to be more group oriented. Therefore, issues of family, conforming to authority and collectivism are heavily emphasized in the education system (Pope, Cheng, & Leong, 1998). Cross-cultural psychology posits that culture imperceptibly, yet powerfully and pervasively, influences human behaviors and interactions (Markus & Kitayama, 1991). Therefore, Taiwanese college graduates' employability is to be examined through the lens of cultural expectations that highlight the employer-centered mentality, which means Taiwanese employers stress the importance of malleability and adaptability as key components of successful new employees. Besides the employers, research participants also expressed their perceived employer anticipation for resiliency and obedience, as well as the level of sacrifice of personal time to 'fit' the workload. While western literature emphasizes on the skill sets to be acquired for one to be competent in job positions, Asian employability definition places extra emphasis on passive adaptation to the employers' expectation and the workplace culture.

Instead of standing up for their expectation of the ideal workplace environment, participants' reaction toward the exploitive workplace culture tends to give in and yield to the existing situation. To some extent, many some participants have rationalized employer-centered authority and "adjust" themselves to the unethical expectations.

While Asian culture emphasizes collectivism and compliance to authority, to humanize the workplace, not only employers' conception for fine employees needs to be confronted; young employees' mindset needs to change as well. A great timing for renovating the mindset is

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through young people's college experiences. Ideally, universities are not to produce workers like cogs for the machines; instead, universities bear the responsibility of cultivating mature, responsible future leaders with independence and critical thinking. Furthermore, these young professionals are expected to transform the current workplace culture with their clear boundary between personal and professional lives, as well as a solid foundation of professionalism. It will not be easy at first, but collective effort in re-envisioning workplaces would bring long-term benefit not only to young professionals, but to the industries and employers as well.

Identify Challenges from Global Competition

Many recent graduates clearly identified challenges arising from the unfriendly job market and work environment. In terms of the job market, fierce competition from China and other rising economies is threatening Taiwan's previously good-standing economy. According to data from the International Monetary Fund (2016), Taiwan is set to lag further behind its three peers - Singapore, Hong Kong and South Korea, economies that underwent rapid industrialization starting around the 1960s. Many economists agree that Taiwan has not adequately responded to this global competition by upgrading its industries or creating other value-adding means such as branding that could lead to higher professional salaries. The issue of salary is a particular challenge in Taiwan. Domestically, although the government pledged to fight Taiwan's low wages, young professionals struggle with average monthly NT$22,000 (US$770) wage that does not make ends meet, In addition, the long work hours and the low flexibility add to the pressure that young professionals have. Low wages make future planning a fantasy for young graduates. Many study participants shared that they could not see the possibility of purchasing their own houses, or even starting a family, in the near foreseeable future.

From these young professionals' perspectives, the grass certainly appears to be greener outside the small island they call home. Given the situation stated, and the shrinking domestic job market, in 2015, an estimated 7.2 % of the Taiwanese workforce- 720,000 out of 10 million strong workforces- was working overseas, mostly in China. To correspond to the expanding foreign market, adaptable employability set further requirement for language ability, cultural adaptation, and conformation to new business model and culture.

Critically Needed Employability in Current Taiwanese Job Market

Graduates from various professional backgrounds identified some key employability attributes that they perceived as the most important after one to two years of working experience. On the basis of acknowledging particular cultural and situational challenges that Taiwanese college graduates face, identifying critically needed employable attributes would help educators and policy makers to respond to graduates' needs more precisely.

Professional Knowledge and Skills

As mentioned previously in the curriculum section, most of the participants identified professional knowledge and skills as the key to stand out in workplace. Yet, graduates felt that they were not offered sufficient or comprehensive training for job needs The dissatisfaction with the low level of hard [and soft?] skill building through college education strongly affects graduates' confidence and ability to meet job requirements. Although some graduates perceived that the universities were trying to address this missing link, the gap is still there.

The gap between the ivory tower and the battlefield

In this study, graduates pointed out that they thought the main reason for the mismatch comes from the long-existing gap between the academia and industry. The study indicates that, the heavy research-centered curriculum that intends to enhance college students' theoretical and

substantive knowledge of the field is not the main problem; the real problem lies in the way

courses are being taught. Mostly graduates do not recall being guided to understand how these

essential theories are placed in the big picture of a profession or research area, nor recall

knowing the application of the area of knowledge. Some graduates mentioned that instructors

used the same materials from year to year; furthermore, many instructors did not really

understand what was really going on and needed in the real world of work [at least]. Even worse,

some did not even care to know. Some of the research participants indicated that they perceived

the existence of alienation between course instructors and the real world; and such alienation is

devastating college students' learning motivation and learning outcome.

Positive experiences

Yet, some research participants did share positive professional knowledge and skill-

building experiences. The courses that graduates identified as "useful" in enhancing their

professional knowledge mostly were taught by engaging instructors who required students to

actively participate in the classes. Such teaching approach inspired graduates to study hard, and

gain new knowledge and skills from the course. Many of these courses asked for project

completion, encouraged teamwork and creativity. Some included educational field trips or

invited guest speakers from the field to share their real work experiences. Overall, participants

mostly acknowledge the way hands-on practices and project-based learning helped them connect

theoretical knowledge and applications.

Instructors as learning facilitators

Raelin (1997) provided a comprehensive model of work-based learning that illustrated

combining explicit and tacit forms of knowing and theory and practice modes of learning at both

individual and collective levels. In the model, learning is best facilitated with both individual and

group approaches, which touch on theoretical knowledge and community [or workplace] application. It also indicates that the instructors are not like the facilitators of the learning process. Interestingly, this particular perspective is very relevant to a line of traditional concept of learning in the Chinese culture, where teachers are viewed as the master who lead the apprentice into the door, and the students needs to practice the skills by themselves[15]. Realistically, it is impossible for an instructor to cover every piece of knowledge in one short course. Instead, instructors are to initiate the learning process, show students where to go, and inspire them to learn. The learning happens when students are ready to take control and their own initiative. It is interesting that as the research participants identified some courses as effective employability builders, they went further in the particular area either as their careers, or were planning on studying more about it in graduate degree programs. Thus, the accumulated personal interests, and perceived knowledge and skills growth eventually impacted their career options and took them where they currently were.

While the undergraduate level of higher education aims to build a base knowledge of professional areas, college students need more guidance in regards to matching their interests and strengths with their chosen profession. This study pointed out that programs or majors that provided students with options to select specific concentrations (e.g. modules or sub-areas) would help students better arrange their learning agenda, especially when it came to choosing certain courses and skill areas.

Advanced career plan

Despite of the college majors, most graduates found that what they do at work did actually not make them use the "course content" they learned in the universities. How can

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[15] 師傅領進門,修行在個人

college level courses become different, that they would effectively boost graduates' professional competitiveness? Indeed, four years of learning in a specific area of knowledge is a good amount of investment of time and energy. This study indicated that the earlier college students can identify their interests, strengths and career options, the more they may be able to plan their learning accordingly. Additionally, helping college students understand the application area of the knowledge they have learned in the classroom setting may help them become aware know how they can entwine the learning and their career future together. Finally, professional certificate programs would definitely help graduates prepare for their next steps.

General Skills: The Five Cs

Besides professional knowledge and skills, almost all research participants have strongly pointed to the importance of soft skills, or transferable skills /general skills, which they immediately needed in the workplace. Yet, most of the participants said they think they did not fully possess the soft skills required at first. Furthermore, many stated that extracurricular activities and work-related experiences had effectively contributed to the soft skill building process much more so than their formal curricular experiences.

Naturally, the level of (un)preparedness varied among graduates. Graduates' previous background, experiences, their personal attributes, and their skills differed. No matter what their background was, they expected higher education to equip them with competencies that would help them succeed in the workplaces. In this study, the participants highlighted five influential skill areas that they perceived as the most critical ones in workplaces, including critical thinking, collaboration, communication, creativity, and character. The last is not a *skill* per se but is even more pivotal in graduates' long-term career development. In later discussion, I will examine

why graduates perceived these skills as critical, and how they perceived the skills are (or should be) built-up through college experiences.

Critical thinking

Critical thinking requires students to analyze, synthesize, and evaluate concepts and constructs presented in learning unit (Bloom, 1956). This cross-disciplinary high-level thinking is also relevant to the analytical ability that knowledge economy mainly operates upon. Demonstrating critical thinking skills is a distinctive ability that can help college graduates stand out among young people; it involves students making decisions, reasoning, and problem solving while deep learning happens.

In the research, many participants mentioned terms like problem solving, organization skills, and decision-making, etc. as they are describing capabilities their employers expect them to demonstrate at their jobs. Obviously, Taiwanese employers were looking for teammates that could reason effectively, find solutions for identified problems with given resources, organize assigned tasks, and exhibit independence in making right decisions. To improve the critical thinking skills, there are at least two approaches college courses should do:

Get them to talk! Most of Taiwanese college students are very used to sitting quietly in the classroom. When instructors ask questions, it is normal for students to remain silent. Most of the time, students do not actively take part in the learning process. The first thing to be changed is to get college students to talk and actively participate in classroom discussions. Thus, to encourage dialogues between students, or between teachers and students, and create a new atmosphere that inspires students to "talk more" will be the first tasks to enhance students' ability in independent critical thinking.

Get them to solve problems! Higher education educators could incorporate more project-based and problem-based learning in the curriculum plan to deeply engage students so as to develop higher thinking skills. Obtaining or learning a large component of those skill sets comes from repeated practice in reasoning, discussion, reflection, and problem solving in a university classroom. The research participants considered the class discussions, systematic research techniques that they used to implement projects helped them enhance the critical thinking skills. In fact, the problem-based learning approach is a proven strategy that helps student build up critical thinking skills, "which focuses on spontaneity, collaboration, and flexible problem-solving skills" (Pi-Hsia, et al., 2014, *p. 316*).

Collaboration

The current knowledge economy does not favor the one-man show anymore. Regardless of the professional areas, the ability to *get along* and *work well with people* has become one of the most basic requirements. However, collaboration ability is more than that. The ability to collaborate with others includes abilities to demonstrate ability to work effectively and respectfully with diverse teams, exercise flexibility and willingness to be helpful in making necessary compromises to accomplish a common goal, and assume shared responsibility for collaborative work and value the individual contributions made by each team member (Partnership for 21st Century Learning, 2015, p. 4).

Research participants indicated that the level of collaboration ability emphasized was beyond their expectation. Many even mentioned that during job interviews, employers would specifically asked them questions about their teamwork ability. Generally, Taiwanese college graduates possess certain level of collaboration skills before they enter the job market. Most

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participants appreciated that group project requirement in college courses allowed them to practice and master collaboration skills by frequently interacting and working with others. Not only in the classrooms, the graduates reported that they felt their teamwork skills were steadily built through student organization engagement, especially through leadership commitments and event planning opportunities. The inclusive and welcoming environment in the student organizations made it easy for students to open up to share their ideas and contribute to the group projects.

Communication

The ability to articulate, listen, persuade and motivate is strongly emphasized by recent graduates; some even referred it as the most critical surviving skill in the offices. Interestingly, graduates that self-identified as good communicators demonstrated higher level of satisfaction toward their professional lives. They are also more often positively recognized by their supervisors. The ability to communicate clearly and well tremendously helps recent graduates to present their strength in the new work environment. However, it is also the skill area that many graduates considered themselves to be loosely prepared. Particularly, many graduates indicated that they found communicating with their supervisors the most challenging among all.

The Partnership for 21st Century Learning, a DC-based non-profit organization aiming to facilitate leadership and skill training in communities, defines communicating clearly as: having the ability to articulate thoughts and ideas effectively using oral, written and nonverbal communication skills in a variety of forms and contexts; it also includes these elements: listening effectively to decipher meaning, including knowledge, values, attitudes and intentions; using communication for a range of purpose; utilizing multiple media and technologies and knowing

how to judge their effectiveness as well as assessing their impact; and finally, communicating effectively in diverse environment (2015, p. 4).

For the enhancement of such abilities, graduates considered that their overall education experiences, including non-academic involvement, were all beneficial. The "amount of talking" required in various courses is very different depending on instructors' class arrangement. Graduates considered classroom discussions as a great training that helped them improve their verbal skills, but there were not very many courses with energetic discussions that they could recall. Although they remembered that the instructors may had encouraged students to express their points, the classroom atmosphere was not welcoming al enough that make them feel "safe and inspired" to talk. From this perspective, Taiwanese educators should incorporate more small group discussions that allow everyone to talk, without the pressure of facing the crowd. In the meanwhile, effort put to highlight the importance of presentation, and creation of a welcoming environment would also help in improving students' motivation for participating in discussions. In addition, new technologies can also be used to encourage communication, especially through nonverbal manner. By using tools like online forum, message board, Google education apps or other online tools, teachers can help encourage less vocal students to join discussions.

Creativity

In today's job market, innovation ability is more important than before. In this study, graduates shared that their employers are looking for team members that are capable of sharing new ideas and strategies, as well as thinking and working creatively with other members. Just as Abdi and Rostami (2012) claimed, *"people have to improve their creative thinking in order to develop technological improvements and utilize that in today's continuously changing and developing world"*. In many areas, especially the STEM field, creativity and innovation literally

decide the success of the industry; therefore, the industry stresses and rewards generously to employees with innovation ability. Creativity is not only valued by STEM field employers; in other field, employers are looking for new ideas in marketing, promotion, techniques, or even ideas of goods and services companies may be selling. Besides, employees with energetic creativity are often times more fun to work with. And the bottom line is, without creativity, entrepreneurship does not have the space to grow.

The International Society of Technology of Education's Standard for Students[16] related to creativity and innovation include these contents: "demonstrate creative thinking, construct knowledge, and develop innovative products and processes using technology" (ISTE, 2007). When graduates recalled their college experiences, only a few mentioned connection between college experiences and creativity building. It seems like graduates did not identify the connection because in current curriculum, not many faculty apply approaches that emphasize the importance of creativity. From what the graduates could recall, projects-based learning and event like *Hackathon* that target on innovation and inventions of original ideas could effectively boost students' creativity and innovative ability.

Currently in Taiwanese universities, most instructors still use written tests for evaluating students' learning outcome. To inspire the growth of creativity, instructors could broaden the option of evaluations to include innovation projects or implementation of original creative ideas, and assure the students that failure could be an important process leading to the completion of

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[16] The International Society of Technology of Education's Standard for Students is a DC-based educational NPO. The ISTE Standards, formerly known as the National Educational Technology Standards, are standards for the use of technology in teaching and learning. They are published by the International Society for Technology in Education, a nonprofit membership association for educators focused on educational technology.

significant innovation. Instructors, as well as students, should learn to value the process as important as the result.

Character

Lastly, many graduates brought forward the significance of good character traits. Character traits like integrity, honesty, loyalty, respectfulness, responsibility, compassion, and fairness are tightly connected to employability. In fact, some research indicates that character building is strongly connected with employability and social skill building; and employers actually emphasized good character while graduates oversee [??] its importance (Blasu & Kuwornu-Adjaottor, 2013; Pila, 2017). That is to say, character is actually more than skills. After entering professional life for one or two years, graduates reflected that the colleagues or supervisors who they consider as role models are usually not the ones with the most outstanding achievement or advanced skills and knowledge, instead their role models are people who people feel comfortable to work with, and like to hang out with. Strong visible skills may get graduates decent positions; yet, great characters make them shine and flourish in the long term. Ultimately, in a time everything seems to be changing rapidly, the task of employability building should be reconsidered in a more holistic and sustainable manner. Although the needed skills and knowledge change with time, the demand for great character never goes out of fashion. The bottom line is, despite the search for various skills, employers are also looking for "a person," a mature, well developed young professional but not a machine, to join the team and make a difference.

Career-Readiness in the 21st century

When employability is brought up in conversation, it is very often that people talk about job related skills and the way to enhance graduates competitiveness. There is nothing wrong with the statement. However, as technology fast advances, robots can easily replace human in regard of skills. Oxford University predicts that 47% of total U.S. employment is at risk due to computerization (Frey & Osborne, 2013). McKinsey Global Institute research suggests that as much as 45% of job activities can be automated, and 30% of workers face the prospect that at least 60% of their work content can be done by machines (Chui, Manyika & Miremadi, 2015). In current era, recent graduates not only compete with other workers, but also the technologies.

Preparing For The Strikes From The Fourth Industrial Revolution

Klaus Schwab (2016) coined the term "The Fourth Industrial Revolution" (4IR) in his book with the same title, referring to the new ways in which technology becomes embedded in almost everyone's everyday life. Schwab claims that The Fourth Industrial Revolution is building on the Third, the digital revolution that has been occurring since the middle of the last century; and it is characterized by a fusion of technologies that will bring us advanced robotics and autonomous transport, artificial intelligence and machine learning, advanced materials, biotechnology and genomics, and in the meantime blurs the lines between the physical, digital, and biological spheres.

Progressive preparation for the challenge

Taiwanese college graduates, as billions of other young people globally, are going to be impacted by the inevitable trend no matter whether they are ready or not. With the foreseeable future where work will have a very different look from today, young adults and higher education institutions should begin, if not have begun yet, to prepare for their marketability for future jobs.

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First of all, to keep up with the trend, there is a need for mindset change regarding career

planning. People used to think career option is a one-time effort. However, participants'

reflections revealed that many recent graduates are starting to realize the significant importance

of "self-learning ability."

A recent survey (1111 Human Resource Bank, 2018) indicates that more than sixty

percent of Taiwanese employees feel that need and approach on-job training or try to obtain

certifications. As the workplace culture changes, less career-long positions are available

nowadays, which means employees should be ready to change their career path whenever is

necessary. Young professionals need to ensure their skills and experiences expand over time, as

well as develop proactive systems to distill information and training which they will need to keep

up with changes. That means to stay in alignment to industry development, taking classes,

following thought leaders in their professional area, and being observant about the day-to-day

tasks and functions that matter and how they are changing.

Going back to the basics

Certainly, it is important to intentionally keep up with the competition with robot by

gaining newly needed skills; another strategy for facing the challenges is in fact to move in the

opposite direction. Based upon Schwab's notion of the new trend, the World Economic Forum

predicts that in 2020, over one-third of skills (35%) that are considered important in today's

workforce will have changed.

In 2015	In 2020
1. Complex problem solving	**1. Complex problem solving**
2. Coordinating with others	**2. Critical thinking**
3. People management	**3. Creativity**
4. Critical thinking	4. People management
5. Negotiation	5. Coordination with others
6. Quality control	6. Emotional intelligence
7. Service orientation	7. Judgment and decision making
8. Judgment and decision making	8. Service orientation
9. Active listening	9. Negotiation
10. Creativity	10. Cognitive flexibility

Table 8.1: Comparison between top skills needed in 2015 and 2020. Source: Future Jobs Report, World Economic Forum (2015) https://www.weforum.org/reports/the-future-of-jobs

The Future Jobs Report (World Economic Forum, 2015) suggested that problem-solving skill will remain on the top of the demanding skill list, while creativity will move up to one of the top three skills workers will need. It is noticeable that as machines, using masses of data, begin to make (smarter) decision for people, hence negotiation and flexibility will drop from the top ten list. Instead, emotional intelligence, which machines do not have, will become one of the most demanded skills.

The trend is obvious. The surviving strategy is to maximize the skills that machines cannot do (yet). Future employers are looking for considerate people that can manage machines with "human-specific" attributes. Yet, this is also a moment for rethinking and reconstructing the higher education purpose and pedagogies to face the challenge timely.

Re-envisioning Higher Education

In the employability-building context, it is easy to limit the discussion to the formation of measurable skills or professional knowledge demanded by the job market. However, the new concept of (future) work, along with the life experiences of the eleven young men and women in

the study, are actually revealing the urgent need of a different perspective to comprehend the employability issue and the higher education system.

It Is More Than Getting a Job

It is important to bear in mind that employability should not narrowly be defined as locating a position, or being successful in the professional area. From the graduates' perspective, and through the lens meeting their developmental needs, employability building, from the higher education preparation perspective, should view graduates' life after campus as a whole. As supported from many studies (Fernandez, et al., 2008; Ghosh & Fouad, 2017; Hui, et al., 2018; Atac, et al., 2018), graduates with better supporting systems and stress coping skills are more likely to demonstrate better adaptation to the new page of life, including the chance to succeed in workplace.

Many participants revealed that their weak spot was the lack of stress coping skills. Stress sources included the new job, relationships, financial burdens, etc. Some said they wished they were warned of the challenges waiting for them so that they could somehow prepare for it. By all means stress could be seen as the "normal" product in the process of socialization. College experiences that address the knowledge and needed skill building in stress coping would surely prepare graduates for the upcoming challenge. Reexamination of the employability building concept and its implementation in a more comprehensive viewpoint, that take graduates' general well-being in their professional career into consideration, will also notably help college students get more ready for the transition.

The Irreplaceable Value of Higher Education

What is the most important value of higher education? The debate of whether higher education should focus on students' employability building has never ceased. Even the purpose

of higher education is changing as the world changes. Some say the larger public purpose of higher education is about connecting students with real-world problems and getting them engaged in creative and collaborative problem-solving, while others say higher education should center its efforts on the creation of prepared minds (Sutton, 2016; Fortino, 2016). Again, what cannot be compromised here?

To differentiate a job-training center and a university, I will use a metaphor to make my point clear. Since the 1970s, robotic arms are widely used in industry. Robotic arm is a type of mechanical arm, usually programmable, with similar function to a human arm. It could be the sum total of the mechanism, or just part of a more complex robot. Types of robotic arms vary as the technology advances; now, robotic arms are even used to explore places that humans cannot go. They are certainly useful, even indispensable in today's world. Some robotic arms are explicitly designed to deal with high technological work, others are invented to replace repetitive human labor by performing heavy duty and easy work; both are needed in industries. However, robotic arms do not operate by themselves. Every specific action performed by these robotic arms is programmed by the human mind; the operation of these machines is to fulfill an operational purpose.

Skills and knowledge are like these robotic arms. Many college graduates leave campus with all sort of skills that make them competitive and "employable" in the job market; however, too often they act like robots with many useful arms (sometimes even with multiple functions), but do not understand its ultimate purpose, or calling- as some people like to say. Most of the higher education institutions are so busy equipping eager students with skills demanded by the market that they forget to create space and opportunity for these young people to find the

purpose for learning. After all, many graduates admit that they feel like spinning in high-speed for no particular purpose.

Not only graduates feel lost, higher education institutions are also puzzled about their position in the needy world, though many might not admit. Just look at the developmental goals of current universities and colleges, using vocabularies including *marketability, efficiency, competition, ranking, choice,* etc., which are frequently mentioned more than ever; meanwhile, seldom mentioned are values and traits such as social responsibility, civic literacy, ethics, and other fundamental values of the original purpose of higher education. Joshua Forstenzer (2017), the Vice-Chancellor's Fellow for the Public Benefit of Higher Education of Great Britain, suggests looking back at the 1963 Robbins Report, which explicitly specifies universities with four functions including *"instruction in skills," "the promotion of the general powers of the mind so as to produce not mere specialists but rather cultivated men and women,"* as well as *"the search for truth,"* and the transmission of a common culture and common standards of citizenship. Not only in the UK, similar efforts were made to build the sound foundation of the American higher education. Woodrow Wilson, the 28th President of the United States and former Princeton University president, wrote in the piece entitled Princeton for the Nation's Service specifying the collective value of (higher) education (1896): *"The object of education is not merely to draw out the powers of the individual mind: it is rather its right object to draw all minds to a proper adjustment to the physical and social world in which they are to have their life and their development: to enlighten, strengthen and make fit."*

Therefore, the value of higher education does not rest in maximizing its market price. A new approach that emphasizes the holistic cultivation of intellectual, social, and mentally mature whole-beings is needed more than ever. Holistically developed young adults with a solid sense of

purpose and goals, and a sense of responsibility and commitment to the community are in demand.

To sum up, higher education institutions should not be perceived as the production line in the factories and other workplaces that intend to fill empty positions. Rather than caring about the price tag of higher education degrees, young adults need guidance toward a more holistic and developmentally appropriate preparation for their transition to professional lives, as well as to meet the pressing needs in the community they belong to. Higher education should, again, retrieve its original purpose and bear the timely task to cultivate leaders the world needs today.

The Student-Centered Learning Strategy

Thus, current higher education system needs to undertake a paradigm shift of the pedagogy, which radically responds to the new vision. This shift is about turning from the employer-center mentality (that forcefully feeds students with needed skills), university-centered strategy (that emphasize on elevating university rankings), and faculty-centered pedagogy (that put students in the passive and receptive listening mode), to a new paradigm that puts student in the focal point of the learning process.

Student-centered learning approach, contrasting the traditional teacher-centered pedagogy, aims to return the learning responsibility back to the learners, instead of the teachers. Based on the constructivist learning theory, student-centered learning emphasizes the learners' role in constructing meaning based on their prior knowledge, experiences, as well as interests. Instead of yielding the authority in the learning process to instructors, students decide their learning goals, agendas, and the approach for gaining resources to reach the learning goal (Hannafin & Hannafin, 2010; Wright, 2011). Simply put, the new paradigm strives to give power and authority in the classroom to students. Ideally, the student-centered pedagogy should be

carried out in all college majors and disciplines, in order to tailor the learning agenda to students'

self-identified learning goals and interests. With such a mentality, teachers' role retreat from the

hub of learning, to be guides and facilitators that facilitate students' learning paths;

simultaneously, learners instinctively develop high-level thinking skills as the bi-product of the

active participation learning process. Again, this should be done not only to please their future

employers, but for the cultivation of holistically developed mature citizens.

I propose four principles and approaches higher education could comply to shift the

operation. I will end with a discussion over the feasibility regarding implementation of the ideas

in Taiwanese education system. Here, student-centered higher education pedagogy should be:

1. Purpose-driven,

2. Value-based,

3. Context-aware, and

4. Relationship-intensified.

Purpose-driven Learning

As recognized in previous discussion, one missing link in today's higher education is the

absent identified purpose for learning. Thus, the first innovative operation approach is to help

students identify their purpose of learning, even before action of learning starts. Currently, most

Taiwanese college students (as millions of other college students in the world) choose, or are

placed to, specific majors then learn the application of the knowledge obtained in classrooms.

The new approach aims to reverse the sequence of operation.

Purpose-driven learning asks students to progressively identify specific problems or

issues that concerns them, no matter the capacity or weight of the problems are. Next, students

will arrange their learning agenda, including planning out relevant courses to take, connecting

with scholars and experts in the field, etc., with the guidance of their advisors. In the process, students meet with their advisors according to students' level of need to discuss the progress and obstacles. No options of college majors will be necessarily involved. Another side of the approach is to help students discover where their strength, passion, and calling really are; the learning process itself becomes a means that prepare the student professionally.

Purpose-driven learning strategy specifically aims to deal with Taiwanese college students' casual attitude toward learning. The wise say of Solomon signals, *"Where there is no vision, the people cast off restraint"* (Proverbs 29:18). By identify a specific problem to solve, students personally connect to the needy situation; naturally, the learning motivation is enhanced. Apart from Paulo Freire's notion of the banking model of education (Freire, 1970), purpose-driven learning inspires students to take leadership in obtaining knowledge and skills that they consider as important and useful for problem solving. Problem identification is highly related to the connection with community toward problem solving. By learning to discovery the need, students also develop concerns and perceived responsibility toward the community.

Stanford 2025 could be seen as the prototype of such education innovation. The experimental education model features flexibility learning timeline, skill-centered, self-identified purpose/mission, and breaking the disciplinary borders (Stanford 2025 website). The new approach boldly pursues a radical revolution in the vision and practice of higher education as they direct their students toward their self-identified mission that is related to the community and world they live in. In their vision, students are encouraged to declare missions and couple their disciplinary pursuits to align with their purposes; they also plan to shift the rigid four-year courses of study to three phases of varied lengths of learning that lead students through calibrating, elevating, and activating phases to facilitate more personalized learning process.

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This new vision helps us to rethink the notion of employability and its implication in the current world. As we talk about employability, we are not only trying to get a college graduate a job, more specifically, a graduate level job, nor building workers for the enormous economic machine; in fact, the essence of the whole employability discussion and implementation should be utilizing all the resources higher education is endowed to help young people understand the challenges facing themselves as individuals, and facing their communities, their countries, and the world we all live in. Still, the alienation between curriculum and the world, including the workplace reality, may be one significant point to start.

Not only Stanford University, all higher education institutions regardless of size or location, should find suitable ways to blend the purpose-driven principle into their operation framework. However, this revolutionary learning approach is everything that is not familiar to Taiwanese students. The collective East Asian cultural tradition does not actively encourage students to develop individuality, identify personal needs, or explore a student's particular interest. Both the research result and the Taiwanese college student development literature body are telling the same story: many college students do not know what they want to do. So much so, the lack of self-perception is the reason purpose-driven learning is crucially needed in current Taiwanese higher education system.

Problem identification needs to become the habit of mind from even earlier education phase. Initial training ought to begin at the time abstract thinking starts to develop in early elementary school age. A more robust teacher training system that enhance teachers' capability to guide student accordingly needs to be established; and students will break through the cultural limitation by learning to arrange their learning agenda.

Value-based Learning

The Merriam-Webster Dictionary defines *value* as "something intrinsically desirable," while The Oxford Dictionary denote the term as "the regard that something is held to deserve; the importance, worth, or usefulness of something," or "the principles or standards of behavior; one's judgment of what is important in life." The pursuit of value is the drive in the back of all human efforts; it is the matter of the value chosen that is leading to different human actions. The reason I propose the value-based learning is to respond to the phenomenon that current higher education went astray and lost its original motive of enriching individual and the community's humanity and development, echoing to Aristotle's ideal of education being a moral pursuit that everyone can flourish. In order to respond to the calling of fulfilling higher education's social practice, educators must reconsider the impact of value-based learning. As mentioned earlier, many graduates realize the long and powerful impact of good character when they start professional careers. These "basic quality" actually determine how far they will go in their career, and the level of wellbeing of young professionals' lives.

However, as the concept of *value* is too commonly brought up, it sounds like cliché for most Taiwanese students, even for teachers. Indeed, teachers may be resistant as they have used passive pedagogies in constructing characters and building values, e.g., by *teaching* about them in classroom, *testing* students' level of understanding in written test or essays, or activities that do not make students realize the significance of these basic humanity desire. Unlike specific skills, values could not be *taught* without living, experiencing, or talking about it; change of concept of mindset will not happen until these information, discussion and incentives accumulate to a level that is powerful enough to foster construction of new desires.

In higher education institutions, to implement value-based learning, there are at least three fundamental elements to undertake. First, the inner curriculum. Again, characters and

values could not be *taught* without students experiencing them. It takes creating the campus atmosphere that honors universal value like tolerance, love, justice, honesty, altruism, respect, loyalty… etc., and these are to be ingrained within the student guidelines, reward system, or even through school spirit motto. There also needs to be changes regarding the student code of conduct or school traditions. Second, connecting value with students' learning trajectory. The implementation of the approach could be closely integrated with the previous strategy, purpose-driven learning. The moment students identify problems they plan to iron out, the identification and naming of values would be instinctive and natural. It does require careful and mindful guidance, dialogue and discussion between teachers and students, as well as between students, and with communities to be served. Third, reflection and discussion. In most cases, the more important the change it, the more effort it requires. Value construction is not a slight movement, it expects people to give up their original habit of choice and embrace a new mindset. Time and space, or guidance, regarding the change is a must in the process of building value. Mindful dialogues, on top of self-reflective moments and spaces, could validly traces the construction process and struggles within it. Fourth, the impact of mentorship. One of the critical ways for constructing value is through modeling; the mentor- mentee or advisor-advisee relationship is probably the closest modeling alliance students would benefit from on campus. Relationship between faculty members and students will be discussed more in the later points.

C. S. Lewis, a former professor at Oxford University and Cambridge University once said, "*Education without values, as useful as it is, seems rather to make man a more clever devil.*" Turning the discussion and pursuit over value from cliché to cornerstone of genuine success is undeniably hard, but worth striving for the sake of the keeping the true value of higher education.

Context-aware Learning

The "context" concerned here broadly includes the circumstances, status, and trends that college students are situated in. For current Taiwanese students and graduates, the context include, but not limited to, global competition, the state's political plight, economic downturn, A.I. challenge, diverse culture, and changing industry skill demands. Context-awareness alerts college students to keep up with the climate and tendency of influential changes, and further prepares them with the concept and skills to surf on the tide instead of being overwhelmed by it.

The sense of awareness, or consciousness, is the key to close the gap between classroom and workplace. Many graduates complain about dated curriculum, nonessential skills that fail employers' expectation, and how they are clueless about the demand of future work or global job market requirements; one critical missing link is to make students aware of the global and local context and challenges. It is only with the awareness, students will be inspired to actively prepare for it, and hopefully advance in the timely trend.

For Taiwanese college students and graduates, immediate local challenges include the aged-society, low-wage, high living cost, the continuous economic downturn, industrial model-shift, and the political plight due to the complicated relationship between Taiwan and China. Taiwanese college students need to be aware of the hardship waiting in their close future career, and choose the path they consider as best dealing with the situation. Many of them will face struggles over whether they should leave for greener pasture; namely the opportunity to work in China or opt for further education abroad, or stay where they are and see how situation turns out to be. Not only local hardships, the global competition and impact from automation and AI are harsh on the island as well. Strategies include grasping to the developing technological trend, and digging into the firm foundation of enhancing humanity-centered robot-proof soft skills.

The question is: how does Taiwanese higher education forewarn the potential upcoming challenges? First of all, creating the atmosphere that allows open-minded brainstorming discussion in the classes and across the campus would be the precondition that foster the awareness. Timely responses and discussion, over the grand trend and new tech advancement will be helpful in building students' sense of mental readiness in correspondence to the changing world. Classrooms, as well as campus events, are great occasions for the kind of dialogues to take place. Meanwhile, students should feel safe and welcome when they express their concern and ideas over the challenges that they perceived of. Second, it is also important to granted students' access to the information and resources needed for preparation. By connecting students to experts from the industry, thought leaders in the fields, and top research sectors and scholars, students will be informed of the feasible paths to prepare for. Lastly, faculty members play a critical role in time-bounded task. Not only students need to keep up with the new trends, teachers can never stop learning what is going on in the real world. To be honest, the impact of an incompetent university faculty is strong enough to hinder students from fulfilling their potentials. In the next section, I will discuss the role of competent faculty members and their influence on young people.

To sum up, context-aware learning approach exposes college students to the benefit and challenges that are presently impacting their generation, motive students' learning desire, and connect the learner to the trend that is leading the world.

Relationship-intensified Learning

The last, and the most basic and influential, approach goes back to the fundamental need/value/urge/desire of humans: relationship. All the approaches discussed above are based on meaningful interactions and relationship. In fact, some research indicates that among the top

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most important values people acknowledge, half of them locate in the relationship category (Barrett, 2010). Student-centered learning approach also heavily builds its foundation on relationships: relationship with teacher, with co-learners (other students), with team members, with professional network, and with community. Identifying the importance and influence of relationship advance learning from two-dimensional paper and words to lived experiences, and the dynamics within relationships could also energetically keep the organic development of the learning community together.

There are some relationships that are worth noting in the learning consortium.

First, the relationship between university teachers and students. Research participants have already shown the in-depth influence of the close connection between students and their mentors/advisors who they identified with. Connection-based learning could either initiate from the teacher or the student, as long as the match and interaction is bringing inspiration and learning outcome that benefit the two ends. In addition, connection with faculty members many time opens up the door to the extended connection with the professional network the faculty reside in; and for most recent graduates, this is the most practical and powerful path leading to the field and positions of their dream.

The positive relationship built between teachers and students does not only bring out academic and research blossoming or smoother career path, from college students' developmental need perspective, the mental support they received from the connection indeed keep them from going astray due to isolation and lacking appropriate guidance. In the value-based learning approach, university faculty members are the very suited candidates for providing modeling of values to these young adult learners.

Interestingly, in the traditional Chinese Confucian perspective, educators are not only expected to share knowledge. There are three levels of educators: lecturer（經師 jīng shī） that conveys knowledge, teacher of men（人師 rén shī） that models characters, and inspirer（明師 míng shī） that advance and fulfill pupil's potentials. Higher education educators are not only responsible to equip students with needed skills and knowledge; they are also accountable for the modeling and inspiration of the next generation of leaders.

The second aspect of relationship refers the relationship with their peers. To begin with, positive and supportive relationship and friendship are critical to college students as they are searching for their identities; social networks means more than leisure and fun for young adult; it is essential and protective in the life stage. Plus, the critical skill of collaboration ability stays firmly on the top needed skills now and in the future. Peer-learning has been frequently brought up in regard to strengthen the student-centered learning outcome. However, most Taiwanese college students learn the skills from their raw, rough experience in trial-and-error. Alternatively, higher education institutions could offer conflict-resolution tips or collaboration 101 as the preparation to students to avoid unnecessary cost.

Lastly, both the students and the community would benefit from in-depth, long-term relationship between the two ends, possibly through volunteer engagement or project-based interaction. For the needy community, college students not only bring in their time, skills and fresh ideas, but also energetically create a lively atmosphere that could impact the community. And for the students as learner, hands-on practical experiences bring theories, knowledge, ideal and purpose down to earth. Then, learning experiences can literally change lives.

To conclude, meaningful relationship is the base of all human pursuit. College students need rich relationship with teachers, peers and community to form a dynamic learning

community. This prepares them for future work models, and also leaves substantial mark in their lifelong learning journey.

After all, if we intentionally turn the subject back to the theme of this study, college graduates employability in the globalized context, the bottom line question would be: **Will all the new approaches help students build stronger employability?** The answer is short and simple: yes. However, there will be one problem. After the implementation of the innovative student-centered learning approach that is effectively cultivating many young, caring, and impactful leaders in every needed field, current leaders' positions (which feature authoritarianism and control) will be in risk. All jokes aside, the four featured learning approaches not only aim to bring higher education to another level, they also would actively, purposefully, and sequentially prepare college students and graduates with the knowledge, skills, and competencies they need to lead the world.

I will end with the notion of "the knowledgeable" Junzi (君子) from the Confucian perspectives. It is a pity that when Taiwanese educational culture embraced the Confucian thinking, the heaviest impact from it is emphasizing students' academic pursuit, and stressing the significant of obedience and knowledge recitation that leads to passive learning. In fact, there are more elements. The concept of Junzi refers to the educated people, characterized by outstanding knowledge and multiple skills, which properly present in today's college students and graduates. Not only hoping to establish him or herself, Junzi has a strong sense of social responsibility toward the community he or she live in (Lin, 2018). As Zi Gong said, "Now the man of perfect virtue, wishing to be established himself, seeks also to establish others; wishing to be enlarged himself, he seeks also to enlarge others." (子貢：夫仁者，己欲立而立人，己欲達而達人).

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Across time and regions, the Association of American Colleges and Universities (AACU) also proclaims its core commitment as fostering students' personal and social responsibility.

Nelson Mandela once reflected, "Education is the most powerful weapon that we can use to change the world." To reemphasize, employability is not only about teaching skills to college graduates so that they could get jobs. It is more than transitioning from studenthood to professional career; it is about the holistic cultivation of a mature, caring, and capable human being with civic literacy and a sound sense of purpose. Taiwan's higher education system needs a revolution, a revolution that put students' holistic development and universities' social obligation in the center of all decision making process. After all, education is about people, and for people.

Individual Interview Protocol

*Conversation will be conducted in Mandarin Chinese

1) Background information

    a) Education: major in college

    b) Employment: current employment

2) Employability preparation and college experience

    *The interviewer will provide competency list of the Business Competency Cube and contents of Taiwanese Employability definition by Chin & Chuang (2012) for participants reference.

    a) Curriculum

        i) In general, how do you think college curriculum prepares you with the knowledge, skills, and competencies needed for the workplace?

        ii) If any, what course(s) do you find particularly helpful in terms of meeting the workplace need? How is it different from other courses? In what way do you think it's helpful?

        iii) How do you think the program design (of your major) help you adapt to the workplace need?

        iv) If you could redesign the program and curriculum, what would you do to make it more relevant to the workplace requirement?

    b) Extra-curriculum activities

        i) What extra-curriculum activities were you involved with?

        ii) Whether and how do these experiences contribute to your employability in the workplace?

    c) Work related experiences

        i) Were you involved with any work-related activities when you were in college? (E.g. internships, part-time or full-time job, etc.)

ii) How do you think they contribute to your current work experience?

d) Career services

i) When you were back in college, what did you know about the career service?

ii) Did you use the service? Why or why not? If yes, what did you use? How is it helpful?

iii) How would you evaluate the helpfulness of the career center in your previous institution?

iv) What help would you expect from the career service if you were a college student again? Why?

3) Perspective on the value of higher education/ employability development

a) What do you think are the most important competencies for landing a position, and doing a good job in workplace?

b) How would you evaluate the value of your college education experience?

c) How do you think your college education experience contribute to your life/ professional development?

Focus group interview protocol

1) Perception of college graduate employability issue

a) Whether and how do you think college graduates prepared for the world of work?

b) How do Taiwanese economic, diplomatic and social situation affect the job market and graduate employability from your own experiences?

2) Re-visioning higher education

How would want higher education to be different in terms of helping college students and graduate prepare better for their professional and personal lives?

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