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Creating Equitable Opportunities in Education. Enduring Challenges for Technical Vocational Education and Training

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ABSTRACT
Vocational training is good at prosperity of economy and integration of young to society. The economic development is said to be dependent on innovation-led productivity that education and training systems are of importance. The paper focuses on technical vocational education and training (TVET) in the context of contemporary socio-demographic upheavals and economic development particularly in the labour market, and seeks to outline the linkage between the equity and employability with the educational expansion. The paper is structured as follows: firstly, there is a discussion on the philosophies of TVET, educational expansion in higher education, and equity. Secondly, the paper provides an analysis of the factors which administrational management could enhance the educational performance of the local communities, Taiwan. Thirdly, by the principles of "access to opportunities" and "massification of higher education", the paper seeks to explore current and future issues and identify the sources of TVET, educational expansion in higher education, equality, and active ageing for employability. Finally, the paper concludes with a number of recommendations and implications. Equal opportunity has been achieved in access to higher education. Higher education needs to recognize the necessity of adapting these forms of education, such as TVET and STEM, to assure the sustainability of society and economy. TVET and higher education have the potential to be the agent of change and the enabler of equality and inclusion. The research method is literature review.

Keywords: *Technical vocational education and training (TVET) educational expansion equity employability active ageing.*

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INTRODUCTION

Vocational Training, Prosperity of Economy and Integration of Young to Society

De Otero argues economic development is dependent on innovation-led productivity that education and training systems are of importance[1]. Ramasamy asserts investment in education and training improves the economic and social wellbeing[2]. Graf and Ramasamy maintain the political economy of skill formation has focused on the area of technical vocational education and training (TVET)[3, 2]. Danaia and Murphy insist "Science, Technology, Engineering and Mathematics" (STEM) education is viewed as essential for a sustainable and prosperous future[4]. TVET and STEM make the important contributions through the provision of the human capital for growth[5]. Those policy makers must deal with the adaption of the national training system to meet national and social needs[6].

Brent describes the role of education is to help prepare graduates for lifelong learning and work[7]. Valiente, López-Fogués, Fuentes and Rosado declare the TVET system is known as the school-based system and dual model of apprenticeships with a link to the integrated comprehensive upper secondary school[8]. Kaiser comments the educational system gives adolescents the opportunity to make and change career along their educational path. In order to make higher education and continuous TVET accessible at any point in their career, the transition between both educational routes has been smooth[9]. The local communities, Taiwan has been working hard to implement the dual vocational training, which transforms itself to a flexible training model relevant to employment and the labour market. Taiwan shows the importance of investigating how different types of vocational education systems and schools are being integrated into processes of innovation development. The paper focuses on TVET in the context of social and economic development, and seeks to outline the linkage between the educational expansion and employability with the education system.

Massification of Higher Education on Equity and Employability

Desjardins argues the older adults comprise an ever increasing proportion of the population that has major implications for public policy, and that "active ageing" leads to positive outcomes such as increased employment and productivity[10]. This is seen as a problem for societies that support this ever-growing dependent segment of the population, and for the reforms needed for higher education to accommodate these learners[11]. Álvarez-Mendiola and

Pérez-Colunga recommend that given the decline of the population at basic school age, the potential demand for higher education will increase significantly[12]. A diverse higher education has potentially a key role to play in fostering active ageing. Taiwan is no exception to the population ageing, resulting from stalling fertility rates and increasing longevity. It becomes important to investigate the extent to which the education systems are responding to the societal challenges associated with contemporary socio-demographic upheavals[13].

Despite population ageing being a significant trend, the older workers and their training needs, reflect the prioritisation of economic perspectives in educational policy[14]. Further, the changing roles of women and the demanding expectations for updated skills, have generated challenges[15]. Slowey and Zubrzycki declare education is expected to get balance between the agenda of equality and employability[16]. The Taiwan economy has experienced a major restructuring of its workforce in relation to changing industrial challenges and competitive global markets. Taiwan is known for its ongoing educational reforms and regulations for equality, claiming "massification of higher education". The paper will discuss these challenges in relation to the policies of higher education on equality and employability, and explore the implications of new demographics for reform in higher education.

Equity in Educational Expansion and Aspiration

Le Grand argues the meaning of equity is ambiguous as it is often equated with a number of other concepts such as fairness, justice, and merit[17]. Dadon-Golan, BenDavid-Hadar and Klein assert the educational inequality is a key factor leading to future social and economic inequality, suppressing social mobility and accelerating the trend of future poverty[18]. Liu insists the education levels of the labor force has some implications for predicting the economic growth of a nation[19]. BenDavid-Hadar maintains the educational expansion might help to mitigate class biases and overcome inequality[20]. Those socio-economic disadvantage continues to be the significant driver of inequality in terms of educational expansion[21]. It needs educators to provide insightful findings to support changes on how hidden inequality is addressed[22].

Nathan maintains society faces a central challenge of how to better prepare young people and adults for an uncertain future[23]. Salminen assers education should promote economic growth and competitiveness while preparing for future challenges[24]. BenDavid-Hadar emphasizes equity in the educational expansion is still an aspiration, and there is a need to address the finance issue from a policy perspective[25]. Taiwan has reached the stage of massification of higher education. But, Taiwan struggles with complex diversity realities, and deals with questions of the provision of an equitable education for students. The implications might aim to achieve equality of educational opportunity for all. The paper will explore the impact of these global changes on the societal development, and the core structures of an educational system to lead us forward[26].

Related Researches

The high human capital development and increased investment in education provide future returns to the economy. Beauvais and Jenson indicates that education is an important ingredient for fostering social cohesion. Rawls's theory of justice advocates the idea of equal liberty that social and economic inequalities should be rearranged[20]. Marx, Bourdieu, Althusser, Lévi Strauss and Iris Marion Young suggested the reproduction of inequalities is primarily made by structural injustices and takes place in institutions like the school[27]. Diversity learning could lead to organisational competitive advantage through integrating existing experience and employees' capabilities[28]. This mismatch between the global economy and the educational structure posed an increasing problem for education systems[29].

THEORETICAL FOUNDATIONS

Technical Vocational Education and Training

Greinert assumes that vocational education and training systems provide solutions for society. Such functions are the selection and allocation function (distribution of people in the education system and to the labour market), the qualification function (acquisition of occupational competences), the utilisation function (costs and benefits in the economic purposes) and the integration and retention function (integration of citizens into society and employment)[30]. Greinert has also identified the basic types of vocational training models: regulatory patterns (legitimate activities determine vocational education and training), corporatistic model (trade unions and workers associations), market model (labour and qualification signals), bureaucracy type (legal regulations by the state or its bureaucracy)[5]. Fischer argues the quality of vocational training is regarded as a key factor for the prosperity of the economy and the integration of young people into society[30].

Ongoing technological change and changing patterns of trade and competition have combined to create the need for a flexible training system[6]. The apprenticeship system is the combination of the vocational education system of enterprise and school cooperation[31,6]. The higher vocational colleges need to develop a modern apprenticeship based on the combination of work and study training program[31]. Hyland locates the distorted divide of a vocational – academic divide that contributes to the subordinate status of vocational education[32]. Many of the responses to reform

in STEM education have responded to this shift toward emphasis on liberal arts[33]. The success of our economy and higher education requires that all of the talented students have equal access to careers in STEM, which often provide a chance to develop future technologies. Developing diversity in STEM will embody the diversity of the population, which will assure greater equity and social justice[33,34].

Educational Expansion in Higher Education

The human capital theory points out that investment in education increases the productivity of an individual which leads to a higher level of economic growth of a nation[35]. Slowey, Schuetze and Zubrzyckiargue the concept of lifelong learning comprises a mix of social justice relating to participation and inclusion, including the provision of second chance opportunities for people to return to education as adult students and in preparation for employment[13]. Lido, Reid and Osborne assert the concept of a learning society invokes lifelong learning as a necessity to ensure individual competitiveness[21]. The notion of "active" is seen as "participation in social, economic, cultural, and civic affairs" , and becomes the powerful when older adults are understood to be active learning[14]. The educational programmes keep older adults cognitively and socially engaged, thereby increasing their health and wellbeing[11]. Istance insists there would be vocational learning needed to enable seniors to adjust to their extended careers and new employment schedules[14].

Beach describes higher education offers students as choosers of education courses with different possibilities in relation to further education and career opportunities[27]. Penprase declares maintaining access to higher education, regardless of one's socioeconomic background, is central in building social mobility[33]. Archer and Kops comment evolution towards universal higher education is described as inclusive of not only the young adults but also the older adults[11]. A definition for employability is a multifaceted concept that encompasses discipline knowledge, technical skills, and the capacity to contribute positively to society[7]. Slowey and Zubrzycki argue vocational training is good at giving people job-specific skills, but those will need to be updated again during a career lasting decades. Lifelong learning has featured as an important element for both tackling social inequalities as well as helping address skill shortages[16].

Equity

Equality is related to the principle of equal treatment by considering dignity and inclusion[36]. Equity has two parts: access to opportunities (resource inputs) and achievement successes (outcome outputs)[37]. Because it is hard to imagine how equality of opportunity can be achieved in practice, Gilead asserts the concept of equality of educational opportunities has not remained uncontested[17]. Nachmias, Aravopoulou and Caven insist that it is based on the social justice belief that everyone should have a right to equal access to employment and training, and development based solely on merit[36]. Gilead maintains in education, the concept of equal distribution of outcomes might mean that individuals leave the education system equally equipped for the job market, and that they enjoy equal levels of well-being and so forth[17]. BenDavid-Hadar argues the right to equal opportunities for each student is a salient factor in advancing social justice[20]. Education is a key factor for changing socioeconomic status and promoting social mobility[38]. Hargreaves pointed out abolishing streaming was necessary if we are to educate all children to develop satisfying human relationships[27]. Ideally the investment in the less advantaged should continue until perfect equality has been achieved[17].

AIMS, UNDERLYING ASSUMPTIONS & METHOD

The educational expansion is an arena for enhancing employability on the labour market[39], and one of challenges in Taiwan is how to integrate the policies of equality and employability. How is it possible to create equal opportunities for students, and to make them equally employable on the labour market? The paper goes on to discuss TVET in terms of designing good employment practices, and supports to the need for the local communities to take some responsibility for the lack of progress in promoting diversity and equality. The paper is structured as follows: firstly, there is a discussion on the philosophies of TVET, educational expansion in higher education, and equity. Secondly, the paper provides an analysis of the factors which administrational management could enhance the educational performance of the local communities, Taiwan. Thirdly, by the principles of "access to opportunities" and "massification of higher education", the paper seeks to explore current and future issues and identify the sources of TVET, educational expansion in higher education, equality, and active ageing for employability. Finally, the paper concludes with a number of recommendations and implications. Equal opportunity has been achieved in access to higher education. Higher education needs to recognize the necessity of adapting these forms of education, such as TVET and STEM, to assure the sustainability of society and economy. TVET and higher education have the potential to be the agent of change and the enabler of equality and inclusion. The research method is literature review.

RESULTS

In 2020, the Taiwan population totalled 23,582,179 (persons) DGBAS[40]. The difficult situation of population ageing and shrinking in Taiwan is a result of a combination of two independent factors: low fertility levels and low

labour force participation rates. The labour force aging problem is especially troublesome in the labour market, where unemployment is high. It will be necessary to make the elderly more active in the labour market. The demographic dividend depends on such factors as investment in prior education, the incorporation of young people of productive age into the workforce, and the conditions that jobs offer workers. In the case of Taiwan, little has been invested in job-related training and the labour market has not seen the stability of jobs. Consequently, a number of young people either cannot get a job or only find unstable ones.

Education Statistical Indicators

As individuals fail to develop educationally enhanced careers, societies lose out the possibility of raising their levels of human capital. The gross enrollment ratio aged 6-21(%) develops from 94.64% in 2010 to 95.21% in 2020, the mean years of schooling (year) develops from 11.3 in 2010 to 12.4 in 2020, and the expected years of schooling (year) keeps the same level as the number 16.6, which is shown in Table 1. The rhetoric of Taiwan inclusivity policy indicates a commitment towards ensuring that the young people have relatively equal access to higher education so that they can compete in the labour market. Taiwan has generally given priority to educational spending since 2000 that the number of total educational expenditures at all levels develops from 765,283 (Million N.T.$) in 2010 to 928,403 in 2020. The educational expenditure per student of university & college also develops from 170,506 (N.T.$) in 2010 to 212,239 in 2019, after massification of higher education with growing enrollments in the universities and colleges. But the total educational expenditures as a proportion of Gross Domestic Product (% to GDP) has decreased. For instance, the rate of total educational expenditure / GDP declines from 5.44% in 2010 to 4.69% in 2020. Such expenditures are vital for poverty reduction and for enhancing the capabilities of people to benefit from globalization. Education and skills are increasingly important for economic survival. Taiwan will experience increased pressure on its systems of upper secondary and higher education. “Contributions to Percent Change in Real Gross Domestic Product by Education (%)” is -0.01 in 2020 [40], and the level of investment in education still is insufficient. The 2008 recession negatively influenced the institutional cost burden and decreased the relative amount of personnel resources available. However, this decreased government contribution may lead to higher burdens for schools and parents, exacerbating education inequality, and at the same time lead to a lower quality of education services.

In Taiwan's current education system, students may study for up to 20 years: six years of primary education, three years of junior high school, three years of senior secondary school, four years for an undergraduate program bachelor's degree, one to four years for a master's degree, and two to seven years for a doctoral degree. In line with the Executive Yuan’s the “Project of Strategies for Confronting the Low Birthrate of Our Nation (2018-2022)”, Ministry of Education provides support for young parents to find a balance between work and family. These measures for preschool children will encourage more people to start a family and have children. The two main goals are “extend provision of affordable edu-care services” and “reducing the financial burden on parents”. Technical and vocational education in Taiwan is provided in both secondary and higher education. At the secondary level, besides technical and vocational courses that are taught in junior high schools, there are also skill-based senior high schools, as well as technical and vocational courses in general senior high schools and comprehensive senior high schools. At the higher level, there are junior colleges (two-year and five-year), technology colleges, and universities of science and technology (two-year and four-year). These colleges and universities may recruit students for associate-degree programs, bachelor programs, master’s degree programs, and doctoral degree programs. Secondary and higher technical and vocational education should emphasize studying with practical action as its main element, offering the abilities necessary for practical work in the job market and linking up with local industries, cultivating relevant talent to promote local development and extension toward the international scene, and exchanging experiences and cooperating with the technical and vocational education systems of other countries[41].

Taiwan undertook significant school reform to provide equal educational opportunities to all students irrespective of place of residence or social background. Taiwan postponed the age at which students are tracked according to their abilities, from age 12 to 16. The upper-secondary system for three years based on policies that specifically addressed an intent on reducing the social-class-bound character of education selection. Taiwan has approached the state of massification in higher education with an enrolment of 95.21% in 2020. Taiwan school system transformed from a differentiating parallel system into a common comprehensive system for all children aged 6 to 18 years old. Later on, this common school was preceded by a common infant class of one year for all children (5–6 years old). Taiwan has created a common comprehensive school for all pupils, an essentially inclusive upper-secondary school and pre-school possibility, and a political ambition for education inclusion for all children and young adults between the ages of 5 to 18 years old. Taiwan has been identified as a socially just and equitable community in terms of access to institutional resources such as education that expressed policy ambitions for common access, social inclusion and equity. Financing of it by the public sector occupies a significance because of growing participation of students from different underprivileged sections of population. Such as the expansion of education and raising the age of compulsory participation in education or training, these measures were underpinned by the view that social problems such as unemployment, poverty and social inequality could be alleviated by transforming them into problems of educational access, achievement and quality. Expanding

systems tend to contribute to social inclusion and equity that more young people go to universities and graduate, across all socioeconomic classes. Educational expansion seems to be reducing inequality of access.

Table 1: Main Education Statistical Indicators in Taiwan, End of 1976—2021

School Year	Total Educational Expenditures at All Levels (Million N.T.$)	Total Educational Expenditures % to GDP (%)	Educational Expenditure Per Student at All Levels (N.T.$)	Gross Enrollment Ratio Aged 6-21 (%)	Mean Years of Schooling (Year)	Expected Years of Schooling (Year)
1976-77	30855	3.96	6889	-	-	-
1978-79	43270	3.88	-	-	-	-
1984-85	123915	5.00	25440	-	-	-
1994-95	449691	6.38	81168	-	-	-
2009-10	778262	6.02	152086	-	-	-
2010-11	765283	5.44	156042	94.64	11.3	-
2014-15	843546	5.19	180035	94.11	11.7	16.6
2019-20	911900	4.82	215412	94.20	12.3	16.5
2020-21	928403	4.69	-	95.21	12.4	16.6

Source: Education Statistics The Republic Of China, 2021
Unit: %

Table 1: Main Education Statistical Indicators in Taiwan, End of 1976—2021(Cont. 2)

School Year	Number of Schools (School) Junior College	University & College	Open University, Continuing School	Educational Expenditure Per Student (N.T.$) Junior College	University & College	Higher Education Number of Students persons	‰ of Population
1976-77	76	25	-	14706	27530	-	-
1978-79	75	26	5	-	-	265681	15.44
1984-85	77	28	6	56260	89704	348291	18.26
1994-95	72	58	9	83786	195870	670718	31.67
2009-10	15	149	87	95345	171821	1356910	58.69
2010-11	15	148	96	92674	170506	1357681	58.62
2014-15	14	145	94	96370	184910	1333664	56.91
2019-20	12	140	91	108305	212239	1207582	51.16
2020-21	12	140	28	-	-	1182226	50.18

Source: Education Statistics The Republic Of China, 2021
Unit: 1 school, 1 person, ‰

Non-Regular Employment

Table 2 illustrates the trends in type of non-regular employment, showing that the numbers of part-time workers and temporary labour or manpower dispatch have risen continuously since the 2000s, from 3.60% (368,000 persons) and 5.04% (517,000 persons) in 2009 to 3.68% (421,000 persons) and 5.53% (634,000 persons) in 2020 respectively, due to the economic downturn in the 2008 and the subsequent low economic growth. Youth who were not in employment or in education faced a higher risk of labor market and social exclusion. Even when there was some improvement in employment situation, a significant part of it was in the form of temporary employment. The major problems of the Taiwan labour market are the worryingly high level of unemployment and the development of atypical forms of employment. The degree of labor market flexibility has increased for young people through the use of fixed-term contracts and several types of atypical labor contracts. Governments respond by redistributing collective resources, and by adjusting labor market policies toward activation. While youth unemployed reached a record high, older workers, aged above 65 years, were badly affected. Taiwan has been undergoing a major shift in its occupational structure due to rapid industrialisation. Thus, a new skill demand has been created for the workforce, and the informal sector will have both opportunities and challenges. TVET is considered as one of the significant means to develop a quality workforce, accelerate productivity, and increase employability. The government is faced with a challenge to ensure that there are enough working-age people to provide a labour force needed for new investment and growth.

Accorting to the percentage share of disposable income by quintile group of households and income inequality indices in Taiwan, the Gini's concentration coefficien increased from 0.280 in 1976 to 0.340 in 2020, and the ratio of income share of highest 20% to that of lowest 20% (times) was 6.13 in 2020 [40]. The achievement of educational systems that bridge the socioeconomic gap between origin and destination still has a very long way to go. Lack of

appropriate level of education to perform advanced technology-required jobs caused some workers to experience downward mobility by taking lower-paying jobs. The demographics of young people outside education and employment are the outcome of a complex interplay of economic, social, cultural and individual factors. As opportunities for youth employment have declined, participation in post-compulsory education has become increasingly the norm. Educational expansion leads to an increased number of highly qualified people who find it increasingly difficult to have stable, middle-class jobs. In order to retain employability and competitiveness, youth and adult continue in the pursuit of a higher education; they also will decide to return to university or college if employment in the labour market is difficult. Therefore, this puts schools in an important position through their role in education of youth and in turn the future employment of the adults. Taiwan is establishing institutional links between the dual vocational training system and higher education. Universities or colleges are asked to introduce procedures which enable the consideration of vocational competences for admission but also to cater the specific needs of applicants.

Table 2: Major Indicators Based on Non-Regular Employment in Taiwan, End of 2009—2020

year/ items	Part time workers		temporary labour or manpower dispatch	
	number	%	number	%
2009	368	3.60	517	5.04
1 Age				
(1)15~24 years	128	17.28	127	17.20
(2)15~24 years / working after school or on vacation	102	79.62	72	56.33
(3)25~44 years	124	2.11	217	3.68
(4)45~64 years	101	2.95	164	4.80
(5)65 and over	15	8.02	9	4.67
2 Educational Attainment				
(1) Junior High School & Below	102	4.25	195	8.14
(2) Senior High School	90	2.54	161	4.52
(3) Junior College & Above	176	4.10	161	3.75
2020	421	3.68	634	5.53
1 Age				
(1)15~24 years	137	16.24	157	18.60
(2)15~24 years / working after school or on vacation	110	79.95	94	59.73
(3)25~44 years	119	2.00	208	3.50
(4)45~64 years	145	3.33	255	5.86
(5)65 and over	20	6.49	14	4.50
2 Educational Attainment				
(1) Junior High School & Below	85	4.81	195	11.04
(2) Senior High School	129	3.50	231	6.29
(3) Junior College & Above	208	3.45	209	3.46

Source: Ministry of Labor
Unit: 1,000 person, %

DISCUSSION

The size and evolution of the population determine the resources for education, and the GDP growth and employment are partly conditioned by the quality of the national workforce[42]. The policies for the ageing population of Taiwan and the consequences for TVET are going to be important future challenges. This study is interesting from socio-economic and educational perspectives.

Integration of TVET in Systems of Innovation Witnesses a Rescaling of Education and Increases the Attractiveness to Vocational Education Careers

Taiwan has historically different types of vocational education, that differs in terms of objectives (for example, vocational education was typically designed to fight poverty instead of qualifying skilled workers)[1]. Since the 2000s the majority of vocational provision for young people has been integrated into the general education system. A university and an industrial partner co-operated to design the degree programmes that aimed to address the skill shortage in the industry. This form of network arrangement is an expanding hybrid segment at the nexus of TVET and higher education[43]. TVET establishes the modern dual practices that offer the opportunity to modernize vocational education and training so that comprehensive resources are made available, and becomes an integral part of the educational system[44,9,31]. There are some major challenges for TVET system. One challenge is to bring the school based learning

processes closer to the demands at the workplaces. Taiwan sticks to the goal that TVET programmes at the schools should enable students to move their educational pathway further towards university. This is important, not only because of the demand for a highly qualified workforce but also because of the cultural and social-democratic values. A second challenge is that Taiwan launched programmes for the integration of new immigrants in school and work. The validation of learning and competence helps new citizens as well as adults to develop their livelong careers[9].

Innovative economies are more productive and better able to support higher living standards that governments need to develop their policies for innovation[1]. Taiwan are demonstrating some success in STEM programs so that there is a shift of focus from disciplinary knowledge to nurturing creativity and higher order thinking[34,45]. This emphasis on diversity and inclusion across universities and colleges will draw the full spectrum of talent within the population and assure equity within STEM education[33]. Taiwan attributes the importance to the improving of permeability in the systems to maintain its attractiveness and access to lifelong learning with career opportunities. Transition from academic secondary and higher education into vocational programs should be well developed[46].

Needs of Learners of All Ages are Incorporated into TVET to Support Upskilling and Career Development

The individual and social benefits of active ageing place an emphasis not just on work related continuing learning, but also on learning about supporting social engagement[47]. Workers need continuous updating and need to be lifelong learners focused upon innovation[15]. Since lifelong learning was defined in higher education policy, efforts have been made to enrol adult learners at higher education[13]. The needs of learners of all ages are incorporated into national policy for the establishment of technological universities that are expected to support upskilling and career development for citizens[16]. The proportion of young who do not work or study represents a serious problem because neither the future labour force will be sufficiently formed, nor will young adults have jobs for a productive entry to the economy[12]. TVET system would be a significant component in creating partnerships between industry and higher education that are based on a competence perspective of employability[15,39,2,42]. Higher education should embrace policy reforms reflecting equity access and support for diverse learners who are adult workers towards a lifelong learning society[15].

Equal Opportunity has been Achieved in Access to Higher Education

Equity in education intends to provide the best opportunities for all students to achieve their full potential[42]. The development of human capital would potentially contribute to the advancement of social cohesiveness as well as competitiveness[20]. By equality of educational opportunity, it is meant to develop a system in which opportunities are open for all[39]. The education inequality of one generation would deprive their offsprings of equal opportunities to succeed. The larger public investment in education would greatly improve the equality of education[38]. Inequality in education based on circumstances that are not dependent on the students abilities but rather are related to the circumstances that he was born into are considered as unfair[18]. Financing education views education as aimed at improvement in terms of repositioning each student in a better position[20]. In Taiwan, there has long been a tradition of implementing reforms for widening access to higher education, and this progress indicates that equal opportunity has been achieved, thereby enhancing social mobility.

This wave of 2008 economic catastrophe was regarded as the detrimental recession, with both Gross Domestic Product (GDP) and the number of jobs declining in Taiwan. This sharp decline in economic activity, which resulted in unfavorable labour market conditions, have important implications for the education sector. With the massification of higher education, the financial resource has become a major challenge[35]. This education finance policy response to recessions should focus on two dimension: to ensure systemic budget support across all education levels, and to devise sustainable budget plans[19]. Taiwan has devised stimulus plans, educational expenditure per student follows a gradual increase, and the alternative sources of financing like student loans are encouraged to adjust with the shortages of resources.

CONCLUSIONS AND SUGGESTIONS

The transformation of Taiwan into a more knowledge-intensive economy contributed to an emphasis on maintaining the employability of the workforce. TVET systems are facing challenges and opportunities to prepare people with updating of knowledge and skills to meet labour market demands.

Challenges and Issues

1) Government should Develop Types of Educational Policies to Extend the Roles of TVET and Higher Education for Active Ageing

The local communities that feature well developed adult learning systems are tend to invest heavily in flexible educational structures. It includes flexible entry points for adults who are socio-economically disadvantaged and adjust their qualifications at older ages. Some factors of advanced adult learning systems include: openness of adult learning to non-traditional students and socially disadvantaged adults, and provisions catering to diverse individual, employer and

industrial needs[10,13]. These social concerns may be addressed by higher education via two routes. First, higher education should transform into centres of learning. Second, higher education should enable diverse ways of learning in collaboration with business and industry[48].

2) Changes Necessitate Innovation in TVET Provision to Meet Industrial Requirements

Changes may necessitate continual innovation in TVET provision to meet emerging industrial requirements[43]. There geographic, demographic, social and cultural factors should all be taken into account when transferring educational policy and practices[2]. In Taiwan, the increased focus on the general education curricular at the expense of vocational education and training in the upper secondary school system and higher education with the aim to ease the transition from school onto the work place, led to undesirable side effects. It should end up reducing the enrolment rates and quality for TVET programs[49]. Taiwan should ensure a continuation of studies beyond initial TVET, which warrants skills updating and lifelong learning, and improves the permeability of higher education and TVET[46]. Higher education needs to recognize the necessity of adapting these forms of education, such as TVET and STEM, to assure the sustainability of economy, as well as to sustain the relevance of higher education as a vital component of society[33].

3) TVET and Higher Education have the Potential to be a Vital Agent of Change and an Important Enabler of Greater Equality and Inclusion

A diverse education system will address needs of diverse students and the required competencies in dynamic societies. The educational expansion is imposed to meet diverse types of economic and social demands[50,48]. From the perspective of equality, higher education is supposed to be an institution for all. It is not only focusing on giving students access to higher education, but also to provide the support for individual students' completion. From the perspective of employability, higher education should be efficient in providing the competencies needed for the labour market[16]. The differences with regard to social background seem to be hidden behind an agenda of integrating equality and employability. The education policy should make the transition between different levels in the educational system more flexible for enhancing employability enough[39].

The end of the demographic dividend, without the benefit of its potential advantages, will create serious challenges, since the employment segments are of low professional and technological content, precarious, and typically offer low salaries. There is still a wide margin for women to enter the labour market. Educational offerings should also become more diversified to accommodate an ever more heterogeneous student body[12]. The development of equity in higher education should guarantee that students of low socioeconomic condition complete basic schooling and pursue subsequent levels, thereby breaking the structural selectivity of the educational system.[12,47].

4) Educational Institutions Need to Design Curricula to Incorporate Equality, Diversity and Inclusion

Creating an inclusive environment will allow more individuals flourish and allow their talents to thrive. The current socio-political environment demonstrates the need for organisations to ensure effective management of diversity and equality[36]. Combination of diversifying student populations and widening graduation outcomes could change the status quo of higher education[50]. Higher education plays a critical role in developing appropriate set of skills and capabilities for the future[28]. Inequality in education is one of the key factors of future socio-economic inequality[18]. Taiwan should try to accomplish the goals: achieving and sustaining competitiveness in the global world while maintaining social justice and social cohesiveness, and allocating equal resources to all[20].

Limitations and Implications

1) Larger Public Investment in Education would Improve the Equality of Education

Education is addressed as a public good; there is a consensus that ensuring education for all is important. The expansion of access to education puts greater pressure on public financing. Financing education views education as aimed at improvement in terms of repositioning each student in a better position. Such a goal fuses two elements: equity and improvement. The equity element would be designed to benefit the least advantaged students. The improvement element of the redistribution mechanism would strive for improving the attainment distribution by rewarding progress[20]. To reexamine the allocation mechanisms and the distribution of educational resources is one of the recommendations for reducing the level of inequality in education[18]. Future research are motivated to evaluate the consequences of fiscal priorities and draw implications for devising school finance policies[19]. Taiwan should continue to design its education finance policy within the framework of equity, and to increase the level of competitiveness, so needed in the globalized knowledge-based economy[25].

2) It does not Describe the Status of Equality/Inequality When the Average Years of Schooling Change

Calculating inequality in education by using the Gini coefficient is more reliable and accurate than the years of schooling, because wealthy countries will invest more economic and educational resources than poor countries. Inequality in education is not dependent on the student and his (her) abilities but rather is related to the circumstances that he was born into are considered as unfair. Roemer defined the variables that an individual is born with as

circumstances which is intended to improve their achievements, as effort. In addition to personal intelligence and skills, there are additional factors, such as the level of livelihood, socio-economic status, origin of birth, culture, parents' involvement, and parental education, affect an individual's education level[18]. Socio-economically deprived students maybe make the greatest efforts and hope to get the success.

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