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**Education for Human Capacity Building: Achievements and
Shortcomings in the Ethiopian Experience**

By: Fasika Chekol

June, 2019

Addis Ababa, Ethiopia

ADDIS ABABA UNIVERSITY
SCHOOL OF GRADUATE STUDIES

EDUCATION FOR HUMAN CAPACITY
BUILDING: ACHIEVEMENTS AND SHORTCOMINGS IN THE
ETHIOPIAN EXPERIENCE

A Thesis Submitted to the School of Graduate Studies of Addis Ababa University in Partial Fulfillment of the Requirements for the Degree of Master of Science in Economics (Economic Policy Analysis)

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June, 2019

Addis Ababa, Ethiopia

DECLARATION

I, Fasika Chekol Mekonnen, hereby declare that the thesis entitled “**Education For Human Capacity Building: Achievements and Shortcomings in the Ethiopian Experience**”, submitted by me to the award of the degree of Master of Science in Economics at Addis Ababa University, is my own original work and it hasn't been presented for the award of any other Degree, Diploma, Fellowship of any other university or institution.

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ABSTRACT

The study has examined the reasons behind the delinking of education and economic development in Ethiopia. The growth of the economy was declining over time due to the growth of unemployment and underemployments of the educated labor force. For this, the misdirected education system was a major factor for the production of unskilled labor force that couldn't be productive and job creator. Of which the Poor enrolment of vocational courses, method of delivery, absence of relevant inputs, absence of industrial linkage as well as the existence of unskilled teachers were the main determinants affecting the quality of education system. In addition, the development of the Ethiopian Educational Road-Map does not also review the relevance of education outcome which is similar to the existing education system. Taking into consideration the human capacity building, the ministry of education should revise the education Road-Map urgently.

Keywords: Education, human capacity building, economic growth

LIST OF ACRONYMS

ARDL=Autoregressive Distributed Lag

CSA=Central Statistics Agency

EPRDF=Ethiopian Peoples Republic Democratic Front

ESLCE=Ethiopian School Leaving Certificate Examination

ETP=Education and Training Policy

GDP=Gross Domestic Product

HPI = Human Poverty Index

ILO=International Labor Organization

MDGs=Millennium Development Goals

MOE=Ministry of Education

MOFED=Ministry of Finance and Economic Development

NIE=Newly Industrialized Economies

NLFS=National Labor Force Survey

OECD = Organization for Economic Co-operation and Development

OLS=Ordinary Least Square

SSA = Sub-Saharan Africa

TVET=Technical and Vocational Education Training

UCCAA=University College of Addis Ababa

UNESCO=United Nations Educational, Scientific and Cultural Organization

WB=World Bank

WDI=World Development Indicator

CHAPTER ONE

Introduction

Human beings have been identified as the prime and most critical input for growth. Whether these inputs come in the form of manpower, machines, ideas, it all resolves as a product of human efforts (Roamer 1986; Lucas 1988). What are produced to serve as a means of production or inputs in every country at a given time in their history very much depends on the capacity of the people. In societies where proper investment is made to produce capable person(s) by those engaged in the production of knowledge and/or their translation into inputs or tools the faster their rate of growth will be.

The generation and transmission of knowledge from the source to users are varied, with formal education being the most prominent (Okobia, 2013). Conventionally, education is a process in and through which worthwhile knowledge and skill, values morals and norms of society are produced and transmitted from one generation to the next.

In Ethiopia, the value of education has long been appreciated and pursued from the early years of its existence. Education as a means of preserving and transmitting knowledge gained prominence in the early years of Axumite civilization. During these years the purpose was more to transmit values of belief than worldly wisdom. The advent of Christianity in the 4th century and Muslim religion in the 7th century gained readymade foothold born out of the inherited tradition with the objective of teaching religion and preserve their respective cultural heritage and continued to expand their outreach easily (Eyasu, 2016).

While the 4th and 7th-century religious education have proven more consequential in terms of essence and geographic coverage, it does not mean the total absence of learning in the country before that time. The Cushitic people, the original residents and builders of the early Aksumite civilization predating the 4th century had a fascination for learning, discoveries and developing their wisdom and know-how in military engineering, astronomy and leadership as well as passing them to the next generation through practice rather than theoretical exegesis (Eyasu2016).

Traditional education developed its own alphabet, produced to transmit as well as acquiring knowledge from elsewhere through translations which were then preserved on and transmitted through parchments.

Modern or Western education was not imported into Ethiopia until the beginning of the 20th century. Appreciating the shortcomings of traditional education to meet the demands of international and domestic political environment and relocate the country on the path of modernity, Emperor Menelik II established the first modern school at Addis Ababa in 1908 (Pankhurst, 1968; Teshome, 1979). Starting with that eventful school, educational institutions have mushroomed all over the country. Modern education is now offered in every hamlet in the country to educate and train future political and business leaders as well as inventors, innovators, adopters and skilled workers in all fields. Growths of educational institutions are not limited to lateral expansion. Currently, the country has 49 government higher education institutions and 128 accredited non-government higher education institutions (MOE, 2017/18).

Despite the commendable achievements, the impact of education on national development has not been commensurate with human developments. The annual Human Development indices of the United Nations Development Program locate it the category of least developed. Growth in GDP seems to stagnate despite the increasing number of the educated.

The thesis does not go into the well-trodden numerical assessment of the impact of human capacity building through education but rather focuses on the reason behind what seems to be the delinking of education and societal development in Ethiopia. For example in a country that is conspicuously short of skilled manpower the country faces a growing number of educated unemployed.

The purpose of this thesis is to review the link between education and national development by carefully examining the literature, explore the possible causes for the divergence of education and development, review the newly education roadmap in view of what seems to be the issue and elicit policy from there.

The rest of the thesis is structured as follows. Chapter two details the development of education during the last one hundred years. Chapter three relates these impressive educational achievements with national development using GDP growth as a proxy and articulates the problem of growing unemployment of the educated in a society that suffers from a shortage of skilled manpower. Chapter four examines the role of new education road-map in relation to lessons learned from the past and suggests policy measures to further strengthen the link between capacity building via education and national wellbeing. Chapter five concludes the thesis.

CHAPTER TWO

Literature Review: Growth and Development of Education

2.1 Theoretical Literature

2.1.1 History of education in Ethiopia

Education is a process of acquiring or imparting knowledge from different sources and in different ways. It could be traditional or modern in substance. As the source of knowledge, traditional knowledge is accumulated knowledge acquired through experience, learning by doing, beliefs and cultures. In terms of delivery, many scholars define traditional education as teacher-centered delivery of instruction to classes where students receive information. Due to the non-existence of paper, all learning and their transmission are done by committing to memory. Thus the clergy recites and quote the Bible from memory as the lay public does with respect to “knowledge” of life. Having developed the Geeze alphabet from early on, the “Master” copies of the Bible and related documents were written on parchments.

2.1.1.1 Education during Menelik II and Empress Zewditu

In Ethiopia Emperor Menelik II introduced modern education in 1908 (Pankhurst, 1968; Tekeste, 1990). The Menelik II School, which bears the name to this day, was opened to educate the youth to learn the ways of the West to modernize the country. Religion, mathematics, law and calligraphy, Science and technology courses were offered (Adane, 1993). Education was limited to the male as the female was confined to the management home which did not need modern education (Bender, 1976).

Empress Zewditu Menelik (daughter and immediate successor of Emperor Menelik II) launched a universal education to all school-aged children including woman. Amharic was made the language of instruction where relevant (Ayalew, 2000). Her proclamation in 1929 stated that all those who do not send their son and daughter to school will be punished 50 birr which is given to the church for feeding and clothing of the poor. Members of the clergy were instructed to advise

their constituency to send their children to school. Empress Zewditu also understood the value and relevance of vocational education to enable youngsters to secure money for livelihood. The ability of reading and writing the child expects to learn handicrafts such as leatherwork and Smith.

2.1.1.2 Education during Emperor Hail/Selassie I

The story of Emperor Hail/Selassie I and education in Ethiopia predates his ascension to the throne. The future Emperor was called Teferi Mekonnen and was among the first graduates of Menelik II School. He was elevated to the post of Executive Officer and Heir to the Crown, and at the same time, Zewditu was crowned Empress in 1916. He opened a new school in his name, Teferi Mekonnen School in 1925 that focused on the teaching of religion, mathematics, law and calligraphy. He introduced the printing press into the country to, among other purposes, expand modern education by organizing the production of textbooks, newsletters, and other materials. His wife Empress Menen joined him by opening the first school for girls in 1931 known as “Etege Menen Girl’s School”.

Between 1908 and 1935, Menelik II School was headed by Egyptians whereas Teferi Mekonnen and Menen schools were headed by French headmaster and headmistress respectively (Ygzaw, 2005). In addition, education instruction was given by different languages such as French, Italian, Geez, Arabic, and Amharic. The schools were closed from 1935-41 due to the Italian invasion of the country.

After liberation in 1941, the government embarked on the long journey of reestablishing and expanding educational institutions in the country. The Ministry of Education was established in 1942 and expanded educational institutions throughout the nation (Seyoum, 1996). Between 1942 and 1954 the Ethiopian education system was advised and directed by the British advisors. English remained the major language of instruction and was supplemented by Amharic. Americans supplanted the British in 1954. A major change is the gradual indigenization of the teaching staff since 1954. To this end, a number of teacher training centers were established throughout the country.

In primary education, English, Science, art, geography, history, arithmetic, music, handicraft and physical education subjects continued to be offered (Taylor and Tesfaye, 1976). To the needs of skilled personnel, commercial, Technical and vocational educational training (TVET) schools were opened to train people in sectors like transport and commerce, defense and law enforcement offices.

After the introduction of University College of Addis Ababa (UCAA) in 1951, an indigenous grade 12 test named the Ethiopian School Leaving Certificate Examination (ESLCE) was introduced in 1954. The test was prepared by the subject matter experts from Haile Selassie I University (Zewdie, 2000).

2.1.1.3 Education during the Derg (1974-1991)

The Derg government introduced Marxist-Leninist ideology to guide the political, economic and social life of the country and to develop knowledge, science, and technology, integrate and coordinate research with production to enable the revolution to move forward (Tekeste, 1990). To this end, the government designed three objectives for education: education for production, education for scientific research and education for political consciousness.

In 1976, the government nationalized private schools and unified the direction and content of education. In doing so it sought to eliminate what it thought was a means of perpetuating the difference between upper and lower class (Ballentine, 1977). Further to the goal of building capacity, the Military Junta expanded educational opportunities to eradicate illiteracy.

As the need for skilled manpower increased and the opportunity for higher training in the West waned, the government opened the first graduate schools in Addis Ababa University in 1979, and Alemaya University in 1984 followed by upgrading colleges into universities.

2.1.1.4 Education during the FDRE Regime (from 1994 to date)

Ethiopian People's Revolutionary Democratic Front (EPRDF) replaced the Military Junta and created the Federal Democratic Republic of Ethiopia in 1991 and redefined the essence and modalities of government and governance in the country. In the realm of education, it published

its Education and Training Policy (ETP) in 1994 to resolve the educational problems inherited from the previous government and to realign it with its own philosophy. The main objectives of the 1994 ETP aimed to provide basic education for all from primary to higher education and ensure adults to be trained in literacy and numeracy. This policy was expected to help the country's effort to transform itself from a low income to middle income in the space of two decades.

To that end, the ETP adopted an education structure composed of preprimary, primary, general secondary, technical and vocational training, and higher educations. Preprimary education consists of a three-year Kindergarten education (KG1, KG2, and KG3). The primary education has eight years with the first cycle (1-4) and second cycle (5-8). The right age of children for admitting to grade one is at age 7 and expected to complete the full primary education at the age of 14. In the same manner, secondary education has 4 years of schooling made up of the first cycle (9-10) and second cycle (11-12). In the first cycle, students were identifying the area of their respective interest and competence and were expected to join at the completion of grade 10. In consequence, students were dispersed into different types of technical and vocational education training (TVET) while the more promising were placed on the university education track beginning in grades 11-12.

TVET education is provided in five levels of level I, level II, level III, level IV, and level V (MoE, 2015). The courses offered were more vocational such as agriculture, construction, finance, etc. Those destined for higher education ended-up with training in various fields at the Bachelors, Masters and PhD levels.

Furthermore, the type and density of ETP education have undergone tremendous changes both horizontally and vertically. The total number of schools in primary education level numbers 35, 838 whereas that of secondary school increased to 3,398 in the year 2016/17. Currently, the country has 49 government higher education institutions and 128 accredited non-government higher education institutions (MOE, 2017/18). Vertically, education is provided from primary to higher education level while horizontally indicates the total number of schools or enrolments in a given education level. Enrolments of students at different levels have shown a significant increase over time as the following table shows.

Table 2.1.1.4 the profile of enrollment of students

Schools	2004/5	2010/11	2016/17
Primary	11,448,641	16,718,111	20,783,078
Secondary	92,483	1,750,134	8,496,357
TVET(I-V)	106,336	371,347	302,083
Undergraduate	173,308	447,693	788,033
Postgraduate and PhD	3,934	20,150	72,345

Source: Ministry of education Statistics

As the statistics indicates the number of learners enrolled from primary education to higher education level reveals a large change over time. The trend looks the growing populations as well as the government of the country is highly participated in education investments.

2.1.3 The Human Capital Theory of Economics

Formal education along with other contributors such as health, learning by doing is the major source of human capital, meaning the aggregate stock of competencies, knowledge, and skills embodied in the ability to create measurable and nonmeasurable economic value (Robert, Michael & Cornell; 2004). It is accumulated specific to the nature of the task (skill required for the task) that are valuable to firms requiring skills. These skills transferable are needed to work that creates tournament, wage dynamics and promotion dynamics between workers. According to Todaro and Smith (2006); Hamermesh and Rees (1996), human capital is defined as an acquired characteristic of workers from education that can make them more and more productive. Hence education is the essence in and through which human capital is developed. In consequence, we will equate education with human capital while not losing sight of the fact that it actually is one of many dimensions of the broader human capital.

Schultz (1961) and Becker (1962) are among the earliest initiators of human capital theory in which education is the main source of skill and knowledge. Since human capital is the stock of knowledge, skill, social and personality attributes including creativity is embodied in the ability of people to perform a task that increases productivity and produce economic value (Barro,

2013). It is defined as the knowledge and experience, natural ability, innate and acquired skill, talent and inventiveness capacity of an individual that they create, use and maintain in a position relevant for the economy (OECD, 2011). It is also considered as a resource or asset. Human capacity is required to manage the entire development process.

The benefits of human capital are complex and span the whole gamut of biological, social, political and economic aspects of the human being. At the individual level, a healthy, knowledgeable and skilled person is always a welcome company and an asset to the community. Economically human capital benefits himself as well as the community because of the healthy physical and mental status of the person, the skill and knowledge acquired through education, training, and learning by doing, all contributing to the invention, innovation, and productivity-enhancing discoveries and activities.

In the economic realm, we can be more specific and point to the positive relationship between human capital and growth of Gross Domestic Product (GDP). The higher the level of human capital the higher will be the rate of growth thus creating a virtuous circle.

The World Economic Forum in 2016 suggested three channels through which education affects a country's human capital and productivity. First, it increases the collective ability of the workforce to carry out existing tasks more quickly. Second, secondary and tertiary education facilitates the transfer of knowledge about new information, products, and technologies created by others (Barro and Lee 2010). Finally, by increasing creativity, it boosts a country's own capacity to create new knowledge, products, and technologies.

The different levels of socio-economic development across nations were supposed to be determined by the level and quality of education, not by the stock of natural resource and physical stock alone (Haribson, 1971). ILO (2003) also stated that the individual endowments of knowledge and skill than physical capital determine the progress of social and economic status and its competitive ability in the world economy. Further, human capital is the main source of knowledge and a guide for implementing this knowledge.

Rate of the economic development is the function of 4Ms: materials, machines, methods and manpower (Santosh & Shrinivas, 2018). Manpower happens to be the most dynamic and crucial

input for effective utilization of the remaining 3Ms. And all other resources but manpower is static. Economic development is the function of proper mix of static and dynamic resources. Just availability of human resources is no guarantee of economic development. It is the quality, competence, and ability of this manpower that decides how effectively resources can be put to use. Skills, caliber, core competence, confidence and commitments make the manpower use worthy. Of these qualities, skills happens to be the most important input that is developed through appropriate training, mentoring and by acquiring suitable learning methods. Absence of skills leads to reducing the quality of manpower and thus affecting the growth process.

For instance, Myanmar and Nigeria are well endowed with physical capital but unable to progress while Singapore and Taiwan without many natural resources have been rapidly reaching newly industrialized economies (NIE) status (Ibid). Without human capital the other two economic factors are ineffective. So that education is the foremost mechanism to create human capital that yields indirect benefits for stimulating physical capital and adoption of technology. Therefore, education is known as both the seed and the flower of economic development.

The inclusion of human capital in the growth accounting stated that the role of increases in education for improving the productivity of an individual depends on the level of skills acquired while in education not the level of schooling (Woessmann, 2008, Barro, 2013). An individual with high levels of education consistently acquiring high skill would have a larger productivity capacity. On the other hand, those with a high level of education having little skill do not increase production capacity. Having these theories, the differential productivity across the country is measured by the level of skills, not by schooling level.

The basic premise of the theory is that education and training provide an individual stock of human capital that increases their productivity potential derived from education investment through its effect of increasing knowledge and skill for work. People with more education typically have a high skill which in turn provides higher earnings (Barker, 2007; Filer et al ,1996). In addition, a positive learning outcome provides increasing job satisfaction over the workers and a greater appreciation of non-market activities that tend to improve their standard of living without causing inflation (Ehrenberg, Smith, 2009). Thus, the theory suggests in the long run that education provides skilled workers at those earning learners could compensate for the

costs of educating them (Bosworth et al, 1996). This is so when the acquired skill has been flexible in line with the change in technology and economy (Handel, Michael, 2012).

2.1.4 Is Schooling a Human capital or signaling Theory?

Both the human capital theory and screening/signaling theory claimed that investment in education is an economic investment that undertaken for the expectation of positive return. But, the measurements of education on the two types of theory become different (De Hoyos, Estrada & Vargas , 2017; Weiss, 1995).

In the human capital theory, education increases worker productivity, and the link between schooling to learning measures the level of skill and earning differential. The theory claimed that skill differential is a major factor for productivity variety. For example, the return from primary education may be higher than those completed from tertiary education, and the returns from skilled individuals are higher than the unskilled persons who have the same level of schooling. But, individuals with higher schooling become highly skilled and then productivity would increase at an increasing rate.

While in the signaling model, individuals with a higher educational level are a signal for having a high ability for the employers. The reasons behind why workers invest in education were because of employers use schooling as a signal for productivity (Kubler et al, 2003). These encourages students to lengthen the level of schooling to signal their ability for employers since the productivity and ability of workers are not explicitly observable for employers but students having certificate of diploma and degree does (Weiss, 1995). Employers find that educational attainment of an individual are attractive in to those jobs since higher level graduates expected to have high skill, self-discipline, motivation and ability to perform well the given job (Filer et al, 2006). Having a university degree is a signal for higher ability having all valuable skills than the secondary school certificates in the choice of employers. The theory suggests that schooling is the most expensive screening strategy for identifying productivity differences. For instance, individuals with the same year of schooling should have the same outcome irrespective of their level of skill.

2.1.5 Competency-Based Education (CBE) and Capacity Building

Education capacity building via competency based learning is the driver for realizing the

learning outcome. Capacity building is all about change in knowledge, skill behaviors, becoming a more productive and positive persons capable of addressing the challenges they face and the country as a whole (Mickibbon, 2012). It is an improvement in the skill of learners that enable them to become productive and job creator when they join them world of work. Thus, the functional education clearly identifies what the learner needs to be taught and assessed in line with developing the critical human capital equipped with practical knowledge, dynamic skill and right attitude to enhance their capacity as a factor for rapid economic growth (York, 2006).

Competency-based education (CBE) is a system of instruction, assessment, academic reporting and grading based on students demonstrating their learning knowledge and skills (Fleming, Brain, 2015). It focuses on learning progression based on proficiency or mastery-based of the contents for enabling students to advance and move ahead on their lesson based on demonstration of mastery. It is outcome-based curriculum and assessment model by developing the skill and competencies of learners via understanding the learning outcome in terms of “what a learner is expected to know” and could use it for work (Adam, 2006). What the students learned in school have a relationship with the environment and the actual situation in the workplace. CBE emphasis the creation and application of knowledge along with the development of validated skills that is highly valued for entrepreneur and employers.

The theory strongly works on identifying what kinds of knowledge the students are accumulating during education whether is it relevant for job creation after school or not? The kind of course/subject and its management of course delivery method determine which kinds of skill are acquired that is relevant for the needs of the society. It makes students skillful by identifying the adequacy of the tools used to developing this competency.

The road to mastery-based learning is full of ups and downs that just come from trying, learning and revising as far as the objectives of the system are to keep the focus on solutions, and make sure that the educators who implement the system are part of the solution. We got failures but we learn from it. The structure of mastery-based learning focuses more closely on how students are progressing by providing more opportunity for them to be lifelong learner. Lifelong learning is defined as all learning activities that an individual acquires knowledge, skill and competences throughout his life within a personal, social or employment-related perspective (OECD, 2004).

Integration of vocational subjects and apprenticeship practice plays the most important mechanisms for developing competencies among stakeholders.

Blending the general education with vocational curriculum

Advanced countries provided some vocational subject curriculum starting from primary education for a century in the name of technical and vocational education (TVE) and growing up to the tertiary level (Arvil, 2007). Vocationalization includes introduction and clear valuing of vocational or practical subjects, applied ways of teaching general educational subject, industry visit and vocational guidance that make learners to achieve a successful school-to-work transition (Lee et al. 2016). It helps students for providing skill for work for post-school option.

Blend education elevates students to have skill and awareness for school to work transition. The upper secondary integrated vocational education well prepared students for entry level, semiskilled employment and covering a wide range of occupation with a few likely to progress to tertiary education. The main targets of taking technical vocational education were to make ready for learners to enter the world of work on completion of their education. On the other hand, the general secondary education provides broad based knowledge and basic skills like mathematics, sciences and communication for those who continue their education to post-secondary to be a scientists and intellectuals and has some basic skills and understanding of an occupational skill to improve their chance of employment.

The general and vocational education were complementary than substitutes for each other (Bishop, 2005). In advanced countries the trend is focused on blending instruction i.e., vocational students receive more academic content to broaden their occupational focus and to continue further for higher education and general students favor practical oriented education to develop their problem solving ability. One of the advantages of globalization is the convergence between academic and vocational education through practicing and curriculum development (Wilson, 2005). For instance, republic of Korea, Japan, and Netherland provided a secondary education with some elective vocational based education to strengthen school to work transition.

Vocational schooling for students make readiness to work by adopting competency and mastery of the trade that are more important than the time spent for instruction (Arvil, 2007). Enterprises

development are less interested in the academic credentialed of instructors but more interested in the level of practical knowledge and competence paradigm. The quicker is achieved, the better for enterprises development and worker's productivity. Recognition of the worker as a journeyman or craftsman does not come with an academic degree but practical degree.

Apprenticeship and work experience for skill development

School leavers always struggle to find employment. And one of the solutions for this problem is linking the school and work internship and developing skill while in education (Anderson et al, 2003). The connection between schools to work transition becomes stronger and reliable as apprenticeship and work experience combined with schooling. This career academy promotes the local enterprises to provide work based learning opportunity. The program is useful for students to developing career for creating their own enterprise upon school leaving, and the local employers becomes satisfied as they get skilled workers.

Germany and Japan were exemplified to that undertook apprenticeship training in their education system. With the total student time, part time is allocated for schooling and the rest time is allocated for practical work within the local enterprises and employers. Schooling expected to develop academic skill while apprenticeship provides practical skill; those high school students who perform well in both skills are highly demanded by employers to be their potential workers. Formal apprenticeship is a common way to combine classroom to workplace learning that develop student's opportunity to engage in enterprise supervised workplace practice develops industry wide skill standard (Aubery et al, 2017).

Apprenticeship program towards modern and formal occupation becomes ever improved the link between classroom and work relation. (Arvil, 2007). For instance, in 1994 UK implemented the expansion of apprenticeship beyond traditional craft and technical occupation in areas of business administration, retailing, catering, personal care and information technology which accounts for half of the participants in the 15 largest modern apprenticeship programs. In 1997, South Africa launched a program apprenticeship in all field of learning. Furthermore, in 1998 Australia introduced new apprenticeship by combining practical work with structured training that results more than 500 occupations that has nationally recognized qualification. School-

industry internship program makes 12% of illegible students disappointing at the beginning, but the outcome has been promising. These learning in the workplace becomes assessed and credited as part of the school work. In conclusion, apprenticeship training provides a much better gain in pay and employment compared to the alternative training that has no apprenticeship character.

2.1.6 The multidimensionality of skills

Knowledge is an input to have skill, but having knowledge is not the same as having skill which has the ability to do something well. Knowledge only does not serve for performing a task, but skill could better. For example, knowing how an airplane flights works does not mean a person has the skill to flight it; and knowing how a wind turbine works does not mean that person has the skill to fix it. Promoting a skill means education for mastering competencies that will help addressing the challenges posed by the dynamic world (Green, Francis; 2011). Systems need to equip students more than just reading and writing math for making them high level skilled towards their demandability for work. Skill means ability to apply concepts and knowledge in practice to address a particular problem to develop a meaningful decision package (Winthrop et al, 2016). Thus, there are three categories of skills:

1. Cognitive skill: These types of skill are concerned on understanding the complex ideas by forwarding and justifying various forms of logical reasoning, adapting the environment, learn from experiences to overcome the different types of obstacles. Learning cognitive skills are needed for personal and professional development, and developing other kinds of skills such as foundational and higher order skill. Foundational skill includes skills related to basic numeracy ad literacy, and general cognitive such as critical thinking ability (Duckworth et al 2015). Whereas higher order skills are the advanced versions of foundational skill.

2. Socio-emotional skill: Are focused on a person behavior and attitude that needs to create and strength interpersonal and social interaction effectively and ethically to solve daily tasks and challenges (Guerra et al 2014). Relationship skill, teamwork, self-control and awareness, self-esteem and leadership skills are part of socio-emotional skills which are non-cognitive kill but they are relevant to a broad range of discipline. The success in any challenges and developmental meting depend on when socio-emotional skill works together with cognitive skill.

Cognitive and socio-emotional skill reinforces each other (Cunha et al, 2010). Individual having drive, diligence or good social skill are more likely to engage themselves for acquiring cognitive skills and to have a positive relationship in their lives. Therefore, these two kinds of skills are called soft skill. Soft skills are needed to perform communication (language skill) and team work, decision making, information and knowledge sharing, relating with dealing one-self such as being able to organize ones learning process, time managing, information selection and generation among others (Parente, 2012).

3. Technical skill: are the acquired knowledge, expertise and interaction needed by a worker for competent performance of a specific duty and job (Winthrop, 2016). It requires mastery of the knowledge, materials, tools and technologies for doing a job. An entrepreneur and digital/adapting technological change skill is part of the technical skill sourced from education and on-the-job training, and learning from doing as well.

A person having soft skill and technical skill has the capacity of solving problems and has organizational skill. Tackling learning crisis and skill gap is much more than important to make investment in education is viable. However, in many countries including Ethiopia stakeholders lack actionable information about what is going wrong in their school and the broader society, so that they could not craft context appropriate response to improve learning. Well investing in education requires first understand how schools are failing and how the system are failing schools, and then by identifying the gap it has to be readjust the education system in terms of competency development.

2.1.7 Why are employability skills Important?

Employability skill has standardized irreversible significance indifferent direction (Vicki.B, Paul.D & Katherie; 2010). First, raising employability skill is a mechanism to improve the transition from full time education to work. Second, it is considered as a key element to ensure the education system and employment system is consistent and demand-led. Third, the integration of skill and employment policy enables the employers to look a diverse set of employment skill that encouraged the unemployed people in to a sustainable work.

An effective workforce has many characteristics which are explained in terms of their own attribute, skill and behavior (UNESCO, 2008). An entrepreneur person attributes self-confident, autonomous, achievement oriented, versatile, dynamic, and resourceful. They have also the skills of problem solving, creativity, persuasiveness, planning, and negotiating and decision taking. Furthermore, they behave acting independently, actively seeking to achieve goals and flexible to respond challenges, taking risky action in uncertain environment, persuading others and commitment to things happen, opportunity seeking and solving problems/conflicts creatively.

In the dynamics of the world of work, one cannot remain in one organization (Jovia, Rahim; 2014). The employability skill enables workers to move from one organization to the other. By applying the concept of protean career, where one can invent and develop his/her own career over time using the existing career since an entrepreneur person can diversify opportunities for business and their sales volume. Employability skills are necessary in all areas and types of job.

The acquired practical skills make school leavers to have the capacity of driving the economy forward by increasing competition, generating new ideas, creating decent jobs and productivity enhancement (Mohd, 2011). Graduates having these skills do not worry about looking an employer in the job market, but he/she establishes their own business (ILO, 2011). Even the skilled individuals prefer to start their own business that may have lower earning than searching a job for being an employee. But they can grow faster and would earn some higher earnings compared to the low skilled individual who are employee of firms. They have also skills and techniques of producing new product and marketed it as well as take series decision about how they would be effective. Then, they become giant employers that can build wealth and job (Kadderi, 2010).

For instance, IT graduates must be good at least two programming languages on leavening school. They must have a skill for system development to develop a good system in accordance with the requirements of users. These skills are required for understanding the basic knowledge of information technology and computer science, design the database and apply the methodology in system development. They also have the capacity of reshaping the damaged parts of system software like mobile phones and laptop. IT learners have entrepreneurial skill if they are able to

use IT as a business process whether they are working for an employee for others or running their own business. Thus, the productivity and profits of an entrepreneur increases indefinitely.

There is a strong positive correlation between the level of education and entrepreneurship because education is an instrument for generating new ideas, improved techniques, and new technologies and product development (Van-Den-Berg, 2011). And the success of any economic development is strongly associated with the level of job creation and entrepreneurship performance (McMullen, 2011). For the country, when much of the learners have been employed, the tax base and tax revenue of the economy increases. And the larger public revenue leads the larger public spending in every sectors of the economy for improving basic infrastructure and better service delivery that boosts the growth rate of the economy and reduction of extreme poverty (ILO, 2011).

2.1.8 The promise/Benefits of education for Economic Development

Realizing the promise of education needs the country to have at least three things (WB, 2017). First, **Accesses to learning-** are supported by a well-designed student assessment technique to keep the health of education system really works. Second, **act on evidence-** to make schools work for all learners, means evidences show how people learn along with an increases in practice and educational innovation and expected to better use of this innovation for employment and development. Third, **Align actors-**ensure to make the whole system work for learning and skill acquisition without technical and political barriers since these barriers could downscale the education system. Without these barriers, mobilizing everyone for a stake in learning, countries could develop innovative educators on the front line.

When the one thinks about education, it is time to understand the stock of what we have learned (WB, 2017). Education is a building block for achieving every development goal. Getting education right-and fulfilling its promise as a driver of development is the focus of a functional education system. At the time when jobs are changing rapidly, the promise ensures the education system strongly worked towards delivering relevant learning and skill that enable students to get employment opportunity and solving the national problem.

Governments across globe conduct a heavy investment in provision of education to prepare the youth to the labor market and contribute the students to social justice and increases economic growth (Tomlinson, 2008). A relevant education is an instrument for achieving the Banks twin strategic goals such as eliminating poverty on the one hand and promoting shared prosperity on the other (WB, 2017). In the 21th century, education, knowledge, skill and competency have become the crucial determinants of individuals and nations productivity. When the century is the age of human capital in the sense that the primary determinants of the country economic development is how well it succeeded in developing and utilizing the skills and knowledge with educating the mass population. Through its effect on human capital, education provides many pays off at both individual and societal level which would be discussed below.

Technology adaptation: Clearly educational provision in a country is the main determinant of output growth of a country in a variety of ways. Primary education and secondary education all raise the productivity of workers through the acquisition skills. Secondary and tertiary education were a critical elements and developments of key institutions like governments, law, financial system and others that were essential part for economic growth. Tertiary education contributes for the development of basic science and appropriate selection and adaptation of technology imports that are available globally as well as domestic adaptation and development of new technologies (Hoang, 2014).

The more skilled people the more technology creation and innovation, more techniques of production and more works were productive by supporting modern machines and techniques. Hence, a productive workforce provides a large increase in economy more than the technology adaptation, and they are considered as the ladder for the economy. Thus, technological change and finding new techniques of production has been the increasing functions of skilled personnel so that positive linkage between economic growth and education is inevitable (Abdul, Tetsuski; 2010).

In agriculture, education increases agricultural productivity using modern farm technology than traditional methods via reducing the time and cost of production (Arellanes Lee; 2003). It improves the decision taking ability of farmers on the selection of inputs and the combination of inputs for better output like seed (Pudasaini, 1983). It also increases farmer's skill via

enhancement of his ability to obtain, understand and utilize new input and improvement in overall managerial ability. For instance, farmers with at least four years of schooling were three times likely to adopt fertilizer and other modern input than the less educated in Thailand (Birdsall, 1993). In Nepal, farmers with 7 or more years of schooling increases productivity in wheat by 25% and rice by 13% than the lower educated (Jamison, Moock, 1994).

The economic development of any nation depends, on a large extent, on agricultural development by creating various forms of horizontal and vertical linkage with the other sectors of the economy (IFPRI, 2008; Timmer, 2004). It is a backbone of the overall economic development by providing some five key benefits. First, agriculture provides food for the growing population at lower price. Second, it provides raw material for the non-agricultural sector. Third, it gains foreign exchange earnings through exporting agricultural product. Fourth, it creates demand for goods and capital inputs from the other sectors (farm technology like tractor, Chemical fertilizer, pesticides, irrigation machine and others). Fifth, agriculture transfers the surplus labor (those labors whose marginal productivity is zero) towards the other sectors of the economy when the increasing demand for nonagricultural products by agricultural sector increases employment in nonagricultural sector. All this contribution is realized where the agricultural output greater than the food demands for the agricultural worker to transfer the surplus to non-agricultural worker.

Human capital as a factor for the endogenous growth model where education increases the creation and diffusion of knowledge and improves technology (Galor, 2011). The small level of technology increases the return from education investment and encourages further the parents to invest more in education. Then further expansion of education increases technological change and income. Thus, better education eliminates poverty among family because the more income the family earns the better saving accumulated for their children. Then the quantity and quality of domestic private investments would be expanded much more which depends on the quality of education of both policy makers and managers (Woessmanm, 2008). Therefore, intergenerational transmission of poverty reduces as the family educated more.

Cognitive skills and school quality rather than quantity makes difference on economic growth between countries (Ibid). The quality of educated persons has the ability to create ideas to

harness the given resource and make it a change factor for the economy. Whereas the additional year of schooling with advanced skills have the capacity to expand their business opportunity and could earn more income.

Sustainable growth of Firms: Effective human capital provides the firm not only achieving the current business goals but also long term survival and sustainability (Marimutho, 2009). Firms that hire higher productive workers employ lower quantity of workers and the reverse is true. In all sizes of enterprises, productive workers were lifelong learners that are the source of competitive advantage and agents of change, and make successfully compete the enterprise in integrated global market through increasing the demand of that product. In effect, this situations improves the both the employees satisfaction and the firms performance for sustaining their organization in the future by upgrade the marginal productivity of the work force for each stages of production process. Thus, the effect of economic growth goes for both the worker and firm through remuneration and profit sharing (Gielen et al, 2010). The performance related pay (PRP) increases efficiency of workforce and firms productivity For instance, Profit sharing increases competitiveness of firms by increasing the trustful cooperation between employers and employees but it may be failed when profit sharing is incorrectly implemented or when there is some sort of denying on the original agreement among them (Jana & Peter, 2013).

Externality: Human capital has externality effect on firms that invests physical capital in a production unit (Acemoglu, 1996). The improvement of workers rate of return and producing more goods and services would expand investments of physical capital by firms. On the other hand, the lower skilled workers would be benefited with increasing productivity through externality effects received from skilled workers through different interactions or occasions. This is because the benefits of investing in education are not also restricted to the direct receipts but goes to other individuals. An improvement of the productivity of human capital influences the downward reduction of the cost of production that increases profitability of firms and initiates them to engage business activity.

Reducing Income inequality and poverty: Improved education has a greater impact on income equality that favors a higher rate of economic growth (Bourguignon, Morrison; 1990). As education coverage increases the poor and disadvantage people benefits more compared to the

other group, in a sense the low income people are better able seek out economic opportunities. Then the income inequality and poverty among them will be reduced since much many individuals earn income and increase their productivity.

2.1.9 Challenges of education relevance: Failures of the promise

While education provides many monetary and nonmonetary benefits, its promise is not fulfilled, nor does education investment always provide the highest return vehicle for improving learning. This is because the deficits in skill and skill gap are commonly observed in many education sectors that arises the problem of unemployment. The promised returns to schooling materialize only when the economy rewards skill and efficiently utilize it. Many countries achieved high schooling but failed to sustain growth due to poor track of investment climate.

Learning shortfall during education year leads to weak skills for the workforce. Lack of job skill is a result of the learning crisis because education systems have not prepared workers adequately. Therefore many educators enter the labor force with inadequate skills. The problem is not lack of trained workers but lack of readily/skilled trainable workers. Lack of skill reduces job quality, earnings, and labor mobility.

The World Bank (2017) presents that the causes of learning crisis such as poor readiness to learn, lack of quality teacher preparation and imputes that ever reach the classroom, the education, and training system that do not link the education with societal/economic needs were the main reason. These are because technological change and global integration depend on learning and skill in every level of education.

Chris (2016) stated that the structure of the education system is the root cause of poor skill among students. And He said when students were not getting what they need; the implication would go to their lives, families and our economy. The quality and relevance of the teaching curriculum in every education level determine the types of knowledge and skill acquired that are important for doing business (Sanisah, 2010).

The poor education system is manifested in academic contents and a poor method of assessment. Even courses are relevant, but the teacher training and student assessment do not consist of the

need, then students are not going to acquiring the skill. And when strategies for change do not take in to consider the development objectives, the final result becomes static production function that makes the failure of education promise. Moreover, society could not reap the full benefits of education. To fulfill the promise of education, it has to be monitored on how well the system is delivered on the ground level (WB, 2017) and the feedback loops on whether an investment in education is returnable or not.

Thus, individuals may under-investing education in relation to acquiring the skill (Rustichini, Schmitz; 1991). This is because individuals allocate the little time and being carelessness for acquiring knowledge relative to the socially optimal allocation of devoting time. In addition, the unused time during education leads wastage of economic resources that is most visible in a low-income country. Finally, the individual, as well as the country, don't have the total benefits of investing in education.

2.1.9.1 For too many learning is not happening

For millions, schooling does not produce enough learning. Learning outcomes in basic education were significantly low in a low-income country where learning crisis experiences (Smith, 2014). Even in middle-income countries, the average learning outcome remains low as compared to the high-income countries. This learning crisis leads people going to leave the school without acquiring basic skills such as numeracy and literacy which translate them towards the workforce with lower skill.

Globally, 125 million children were not acquiring literacy and numeracy after spending at least four years of schooling in primary education (WB, 2017). For instance, in South Africa, 27% of 12 years old children enrolled in graded 6 with illiterate functionally, while in Zambia 44% could (Hungu et al, 2010). In Guyana also 29% of children do not read a single word at the start of Grade 3. This indicates that millions of children complete primary education without acquiring basic skills needed for further learning. In the west and central Africa, 58% of children in grade 6 were not competent in reading or mathematics to continue schooling as the 2014 regional assessments shown us. Thus, across 51 low-income countries, only half of grade six women could read a single sentence. On the other hand, 95% of students in Organization for Economic

Co-operation and Development (OECD) countries could perform better in international assessments of literacy and numeracy (OECD, 2016).

According to the World development report (2018), the effect of schooling on worker skills differs across countries. For example, in Colombia, the working age population achieves their basic literacy in lower secondary school while Bolivia needs more than six years to achieve the same proficiency. In Nigeria, among aged from 18-37 years old, only 19% of primary completers can read. In Ghana and Kenya 80% and 60% of working-age population respectively have at most level 1 literacy which is limited to understanding basic texts, but they were not able to integrate and evaluate what they had learned for work which is contrary in high-income countries where only 15% of the working-age people have level 1 literacy or below. The low level or proficiency skill among the students in developing countries does not use schooling for skills needed for work and return the benefits of schooling and for further education. In the modern world, most high-quality jobs need competency beyond minimum proficiency or literacy.

Having low skill does not only influence the employment of learners for the first time after leaving school but also affects long term growth trajectories. Many schools graduate students without having them the key skills like soft and technical skill. This skill deficit limits opportunities for further training and education because the capacity to compete and reconstruct the already lost skills become shrinks over time; due to the limited access for education programs for the second chance and even on-the-job training favors those having high skilled individuals. The total consequence becomes worse as technology affects the demand for skill.

Larson and Valerio (2017) find evidence for the estimates of 41 countries indicates that more than 2.1 billion out of 4.6 billion working-age population (age 15-64) lacks the crucial skill for work. Among these aged 15-24 reaches 418 million. Even though this skill gap exists in all countries, the magnitude is higher in developing countries where 120 million in South Asia, 92 million on East Asia and Pacific and 47 million on Latin America and the Caribbean where all youths are age from 15-24 years old. The implication is clear and understands that a large amount of skill gap does not help for an instrument for achieving any development goals as long as the dimension and its origin of the problem did not recognize.

There are factors that determine the level of skill gap by directly linking the learning outcome. In addition to the education system, teacher skills and ability of relevant input determines the learning outcome that was discussed below.

Teachers: play the most important role for student learning. For instance, in the United States, great teachers upgrade student's skill by 1.5 levels whereas the poor teachers will makeup students by 0.5 grade level in the same year of schooling (WB, 2017). The difference in learning outcomes such as language, math, and other skills for works as a function of teacher's practices and behaviors which has a large impact on student's achievement. The global shift towards competency-based standard education and assessment amplifies the quality teachers (Axmann et al, 2015). Quality teachers can offer constructive feedback as students work through competency module. However, teachers lack the industry qualification or up-to-date pedagogical expertise when it comes to teaching using a competency-based skill approach. For instance in Malaysia, teachers face difficulties for moving students assessing students' knowledge towards assessing occupational and task-specific competency.

Moreover, the supplies of high-quality teachers are lower in low-income countries. Even the teacher entry requirements are lower in some Sub Saharan countries for simply to ensure an adequate supply of teachers. In Latin America, the candidates applying the teaching profession are academically weaker than those entering higher education students. In six sub-Saharan Africa teachers in primary school may not have always the basic pedagogical skills and sufficient mastery of the contents what they expected to teach with the exception that few teachers have a good practice teaching profession.

Many countries in the Sub-Saharan Africa region (Bold et al, 2017), the average primary school teachers do not perform much better in reading tests than the highest performer graded six students. Specifically in six countries of the region such as Kenya, Mozambique, Nigeria, Tanzania, Togo, and Uganda; 40% of primary school teachers were not knowledgeable as much as their students have.

Insufficient input: In many developing countries, the expansion of inputs has not been growing with the level of enrolment rate (World Bank, 2016a). The expansion of schools and input

available has not been complemented and leading to a decline in per capital input available. In most low income and middle-income countries, a large number of schools did not have sufficient laboratory or experimental materials and the other basic materials that support the teaching-learning process. Students have not been in a position to use the materials for apprenticeship purpose. Universities in these countries also do not have sufficient inputs for a research paper when the subject needs an experimental result. With the absence of any alternative, students choose to lag their year of schooling until the required data becomes available. Thus, because of the absence of the relevant inputs, teachers are obliged to teach the theory of the subjects in the classroom only without showing empirical justification of what they have taught into reality.

2.1.9.2 Problems Relating to Education in Ethiopia

Effective education opens both minds and doors to people to occupy responsible positions in the global economy. It is a major force for human betterment through its effect on enhancing productivity and efficiency of humans. Yet, today, many school leavers are finding difficulties for securing jobs after completing their programs. The educated unemployment problem has become a critical issue confronting both developed and developing countries today. The magnitude of educated unemployment appears to have an overwhelming toll on developing countries including Ethiopia.

The last one hundred years of modern education provision in Ethiopia seems useless since there is a growing number of educated unemployment in primary, secondary and tertiary education levels. As Central Statistical Agency statistics of the national labor force survey (NLFS, 2009, 2018) indicates the total educated unemployment reaches 879,899 in 2009 and 1,469,689 in 2018. While one needs to appreciate the increase in the expansion of educational opportunities, it is also necessary to point the problem of the educated unemployed, which are growing in tandem with the increasing number of graduates.

This is because schooling lacks learning in the country that make the promise of education failed and sets up a false expectation. While schooling does not result learning, individuals needs to maximize their schooling level that serves as a signal for employers. According to the Ethiopian ministry of science and higher education assessment report in 2019, we heard that there are

many people who had a “forged card of national examinations” but seat for higher position in the government employment center. This indicated that the educated officials are highly engaged in corruption and working for money but are not cared for producing a skilled workforce. Even there are open announcements for doing assignments and seminar papers/thesis which kills the skill acquisition process of learners. While an individual who have money can upgrade their schooling by purchasing it. Schoolings are simply bought and sold with money in our country without acquiring the necessary skill for work.

The combination of higher level schooling without learning the workers have, and the high priority given for these individuals whether by having greater GPA or and relying on their kinship or corruption networks to access employment in the job market, then the quality of the job and marginal productivity deteriorates over time. Because they are also engaged from as they are coming from such as corruption on which inefficiency coming from the two points of view. One, the upper level of institutions is managed by incapable officials than the lower. The lower classes even if better are implementer of the programs adopted and designed by the upper unskilled official. Two, the best and useful policies designed by the upper are not well implemented by the lower group due to the absence of effective follow-up between implementers and policy designers. Then in both case, service delivery are based on cadre than capacity building. As a result, there are increasing numbers of educated under and unemployed due to lack of jobs, lack of income and a seeming lack of prospects for today’s graduates which greatly harm the economy.

These under and unemployment in the Ethiopia not only affects economic growth, but also has environmental and social development influence. Environmentally, for instance Lake Tana were, in a large extent invaded by “water hyacinth” or water weed that has been greatly responsible for the drying of lake and declined the production of fisheries, and the role of environmental science is useless. In addition, it is difficult to control on board the recent fire accident occurred in Semien Mountain National Park of Ethiopia in April 2019 that created the death of many wild lives and depleted the beauty of resource. Absence of technology not only mad the country lost these resources, but it cannot have guarantee for maintaining the rest of our resources. Thus, engineering education could not serve for the adaptation of useful machine.

These losses of natural resource would significantly reduce the country economic growth through declining of tourism earning and exposing to climate change.

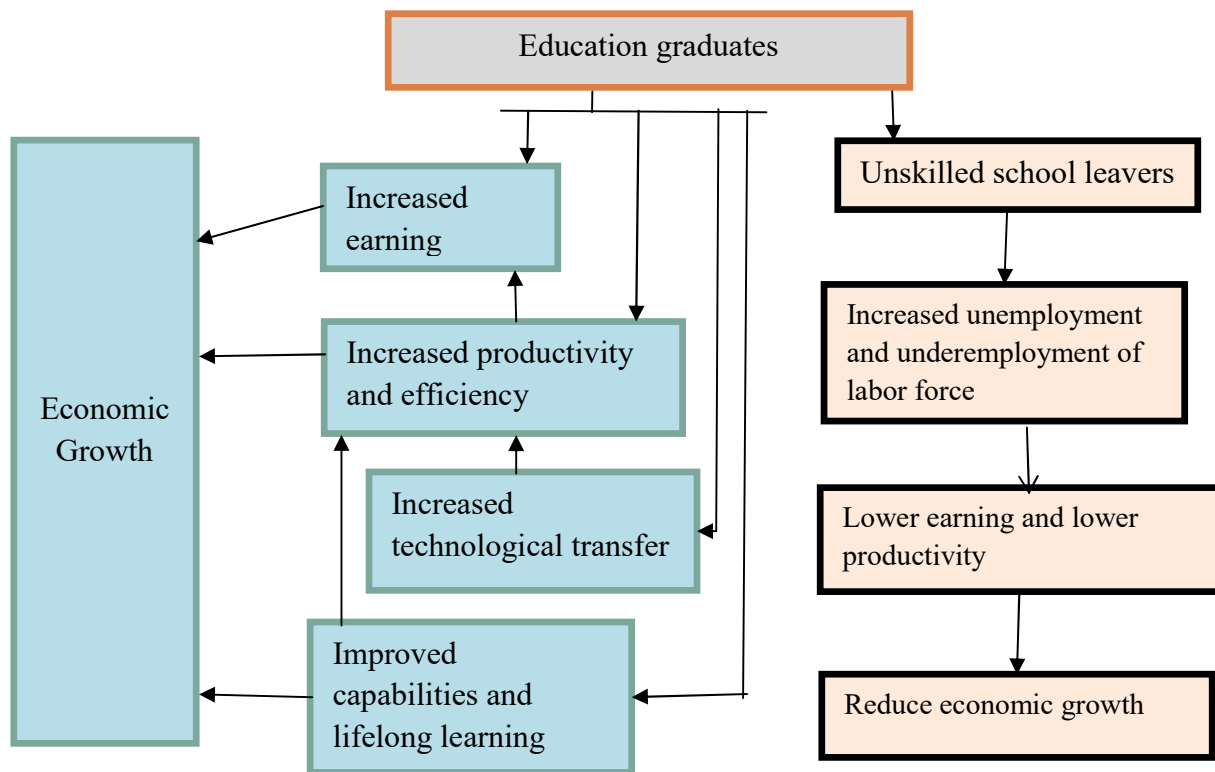
Socially, the inability of the school leavers to find gainful employment tends to engage in criminal activities such as violence, robbery, prostitution and pick-pocketing to survive their lives in the society that makes social stability (Lipsey, Chrystal, 2011). People without skill become narrow minded and is responsible for the prevalence of civil war and rebels in the African continent by motivating the youth to turn the transition from street to war bestows as a sense of prestige and reformation (Austin, 1999).

Currently in Ethiopia (2018/19), violence and social instabilities has been arising in many regions of the country. These conflicts make many thousands of people displaced internally and, homicide of their lives. It is not only displaced from their home but also tends to loss their wealth and prone to food shortage. Many schools were closed-up and around one million students were dropout from their education. Hence, the social instability created in the country makes a significant loss of economic resources through increasing dropout/repetition rate of students and military expenditure as well as raising public debt. These problems are mostly emanated from educated classes who seat the higher position. Thus, the relevance of education for the country development is not visible that much.

2.2 Conceptual framework

The diversity of theories prevalent in the literature on education and economic growth necessitated the creation of an overarching conceptual framework that could be used to guide the review team's decisions regarding the identification and analysis of evidence. The framework draws on the relevant theoretical paradigms and articulates a conceptually consistent understanding of how education contributes to growth in different contexts. The left side of the framework shows the assumption of education and human capital relevance for growth. On the other hand, the right side of the framework indicates how education delinks with the Ethiopian economic growth. Therefore, the following figure summarizes the conceptual frameworks of the impact of education for growth in Ethiopia which may contradicted with the human capital assumption on the left side.

Figure 2.3 Conceptual frameworks for the impact of education for growth



Source: own construction 2019 (from the literature)

The human capital theory of growth stated that education affects economic growth through increased earning, increased productivity and efficiency, improved technology transfer as well as capability of the stakeholders. But, the situation does not work in Ethiopia since the review understands the negative effect of education for growth by reducing their productivity and earning capacity in addition to unemployment growth.

2.3 Empirical Survey: Impact of education for economic growth

This section provides a review of empirical studies on the impact of education and its determinants for the economic growth of countries. The literature also provides information on how education and its proxy's variables measured types of data and methods used in the estimation of the economic growth and function. The findings indicate that education is measured in several ways. For example, Hanushek and Wessmann (2007) measured education by enrollment rate; Adewara and Oloni (2012) by public education expenditure; Barro and Sala-I-Martin (2004) by completion rate and year of schooling, and other authors use different measurements of it.

Jeemol (2016) carried out a survey on skill gap and employability In India using the labor force survey on employment and unemployment on University graduates including the individual labor-market information like employment status, type of occupation and industry. The survey finds there are three kinds of skill gap: First, Over-education which refers to a form of skill gap where over-qualified persons are hired for jobs that do not require such qualification due to over-supply of persons in such job. For instance, a postgraduate in economics is hired for a bus driver. Second, Skill mismatch in Technical education: where persons graduated in technical fields like agriculture, engineering and technology end up jobs that do not require that training. For example, an agricultural scientist appointed as a director of a firm. Third, quality skill gap: where firms hire graduate students but the firm complains that the inadequacy of skills of workers in their field of study. As a consequence, these less qualified workers require additional training that adds to the cost of the firm. For instance, graduates in commerce are required to be trained in the accounting procedures of the firm. Depending on these result, Jeemol concludes that the poor quality of the Indian education system is responsible for the occurrence of a skill gap.

In addition to Jeemol who study qualitative analysis, the following quantitative literature reviews started with cross-section studies. Barro (1991) finds per capital GDP growth is positively related to enrolment and literacy rate using OLS and IV (instrumental variable) estimation. Murphy, Shleifer, and Vishny (1991) employ OLS and assured that primary enrolments have a positive impact, while they show enrolments in law and engineering are negatively and positively

associated with growth respectively. Applying the OLS analysis, Benhabib and Spiegel (1994) reported that human capital does not affect per capital growth. In addition, Gemmell (1996) employ 3SLS and find a positive associated between enrolment and growth rate, while Collins and Bosworth (1996) finds the same relationship using schooling years via OLS. On the contrary Bloom et al (1998) reports an insignificant effect of schooling years on growth through OLS.

In China, Hua (2005) adopted a production function to understand the impact of three levels of education on productivity. He measured productivity based on the ratio between production and a weighted sum of production factors. The results suggest that since employment is one transmission channel of education to productivity such that, while individuals with higher education tend to go away from the public sector, and those with primary education attempt to stay within the sector to advance their skill.

Furthermore, Pritchett (2001) reports a negative growth influence of schooling years using OLS and IV in MENE region. He justified as education increases private wage but not human capital; the rapidly declining of marginal returns to education; and the poor institutional environment that does not favor the accumulation of human capital were the main reasons that created the insignificant impact of education for growth. In addition, Chakraborty (2004) shows via OLS, enrolment rate increases growth, but Barro and Sala-Martin (2004) through 3SLS finds that schooling years are insignificantly related to per-capital growth rate, while scores exert a highly significant positive impact. Finally, Lee (2010) reports an insignificant impact of enrolment rate on growth.

Using Panel data analysis becomes more common later than cross section due to the availability of more complete data sets. In this framework, the effect of different educational level affects the level of economic growth of a country based on their development levels (Sianes & Van, 2000). Silanes and Van noticed that in the case of primary school, a 1% increases in schooling brings a 2% increases in GDP per capital in less developed countries, but the effect is not observed in OECD countries. A 1% increase in secondary school enrollment rate would determine a raising of 2.5-3% level of output in developing countries and a 1.5% for OECD ones. Thus, there is a positive correlation between economic growth rate and accumulation of human capital at primary level for poor countries, secondary level for medium income levels and at a superior level for

rich countries (Judson, 2002). Lee and Kim (2009) Conducting fixed-effects and system-GMM estimations and suggest that secondary education enrollment rates appear important for low-income countries growth; higher education is growth-enhancing for upper middle and high-income countries. They all concluded that the specific factors for each country particularly the quality of education system are shaping the nature of entrepreneurial talents and the impact that education has on growth performance make a difference across countries (Crowling, 2007).

On the other way, De la Feunte (2011) and Tsai et al (2010) employed average years of schooling as a proxy for human capital in a panel of OECD countries. In a combination of the other variables, human capital has the highest positive coefficient value with the coefficient of Spain is the largest. Wang and Liu (2016) reported that whether the country is developed or developing, higher education has all a significant positive impact on economic growth but primary and secondary education does not have a positive significant impact. Costantini and Monni (2008) employed 3SLS and finds a positive correlation between enrolment and growth, while Seetanah (2009) employing GMM and Bhattacharyya (2009) via 2SLS reports a positive effect of enrolment rate and schooling year respectively.

Barro (2001) and Bassanini and Scarpetta (2001) applying 3SLS and Pooled Mean Group (PMG) estimators respectively and finds that schooling years have a strong positive effect for per capital growth. Kanayo (2013) employed Error Correction Model in a panel of developed countries and found that investment in human capital in the form of education capacity building impacts positive and significantly, while capital expenditure on education was the insignificant role for the growth process. Mongi (2018) analyzed the relationship between education expenditure and growth in high-income countries and results found that total education government expenditure has a positive significant impact on growth through the provision of quality input for education.

Benhabib and Spiegel (1994) studied the effect of human capital in terms of educational attainment for the growth of the economy using Coup-Douglas production function. They model technological progress as a function of the level of education and results indicated that education affects the overall productivity factors through innovation, diffusion and catching-up process. Hence, education affects economic growth via technological development.

Furthermore, Gazi (2009) studies proved that due to education consumes a larger proportion of private and public spending, primary education significantly contributes for social development, and secondary education has little development, while the significance of higher education is not satisfactory in developing country. Gazi recommended the urgent need to conduct a broader study on this issue to make the education system more effective towards development. Similarly, Hanushek (2013) conclusions from his study confirmed that developing country will find difficult to improve their long-run economic performance without improving school quality. On the contrary, Pocas (2014) use panel data for developing country from the period 1980-2005. The study found that investment in education and healths are significant not only for increasing wellbeing but also for sustainable economic growth. However, Quenum (2011) analysis result shows the post-primary educational level has a negative effect on economic growth in developing countries due to the poor quality of education.

The least common type of analysis uses time series data since education data for a long time period is relatively rare. Mohsin (2005) asserted that improving the quality of institution and accumulation of human capital have the largest pay-offs in terms of achieving higher growth since better education and health care have a significant impact in Pakistan. Investing in these areas also opens the possibility of entering Pakistan entering into a various cycle of high growth and improving the living conditions of the population. In the same manner, Maria (2013) employed error-correction and co-integration techniques and results confirmed that there are long run and short-run relationship between education and economic growth, and concluded that there is a good possibility to move forward Pakistan economy by investing in education.

Ifeoma (2013) carried out a study on the impact of education investment on growth, and find that education expenditure plays a significant factor responsible for the swift growth of the American economy. He also pointed out that a dollar investment in education brings greater increases in their country GDP relative to a dollar spends on physical capital like road, dams, and street light, etc. In addition, Nketiah-Amponsah (2009) show that education expenditure has no significant impact on the growth of the economy.

Lawal and Iyiola (2011) employed OLS and concluded that primary enrolment and total expenditure on education has a negative impact, whereas gross capital formation and post-

primary enrolment have a positive influence on GDP. Moreover, Adawo (2011) employed VAR techniques of estimation in Nigeria and results shown that physical capital formation, primary school, and health expenditure were significantly influencing growth whereas secondary and tertiary education expenditure was found to dampen the economy. In Pakistan, Rob and Wilson (2004) and Asghar (2012) findings understood that there is a loose correlation between investment in human capital and economic growth in the shorts run. They all recommended that the study must be useful for education policy makers to augment the human capital formation with economic growth via expanding the technically oriented courses.

In the USA, Moretti (1998) conducted a study on the indirect impact of an additional year of schooling for income growth. The results showed that a 1% increase in the number of tertiary education graduates would determine a 1.3% increase in the incomes of the high-school graduates and 2.2% of those with post-high-school revenues. The well-trained employees have an important influence on the productivity of the less trained ones and generating a knowledge spill-over inside the firm.

In this way, the workers with a better level of education have higher revenues for the firm because even when they have the same responsibilities it is considered that the productivity of the higher skilled people is greater by raising the firm's innovation capacity (Sianesi and Van Reenen, 2000; Acemoglu, 1996). This increases the competitive advantage of the firm by generating a higher profit which indirectly increases an additional investment in technologies and in new equipment. The production function changes in the case of an additional method of production, the proportion of the physical capital being more and more significant, compared to labor.

In this way, ratio capital/labor is changing (Acemoglu, 1996). Acemoglu also noticed that the new technologies are favored by the increase in the educational stock. The studies of Fleisher et al (2010) confirmed that the contribution of human capital is greater than that of physical capital for economic growth since human capital is a factor for creating the latter.

Pradhan (2009) employed the error-correction model to examined the causal link between education and economic growth in India. The results confirmed that there is a unidirectional

causality between education and economic growth. Thus, higher educational graduates contributed to growth directly by making workers more productive, and indirectly by leading to the creation of knowledge, ideas, and technological innovation. Baldwin and Borrelli (2008) applying OLS and reports there is a positive effect of education for growth via the effect comes from the ability to create and absorb new technologies and externalities effect of education.

On the contrary, Adewara and Oloni (2012) did a study of the impact of public spending for education on the economic growth of Nigeria using time series data of 1960-2008, and findings showed that the impact is negative due to the high rate of rent-seeking and educated unemployment growth. Ndiyo (2007) employing a vector autoregressive (VAR) technique and finds a negative correlation between these variables. In addition, Nurudeen and Usman (2010) via least squares reveal that expenditure on education has a negative effect on GDP growth. The low quality of educational service has been significantly dampening economic growth through the lower performance of the school to work transition (Pungo, 1996).

In Ethiopia, Tefera (2017) carried out a study on the impact of human capital on the economic growth of Ethiopia covering the period from 1974-2015 using ARDL techniques of estimation. The ARDL method has been used to estimate the co-integration and error correction model to determine the long run and short-run impacts of the variable. He used school enrolment as a proxy for human capital. The independent variables were education expenditure, health expenditure, labor force, gross capital formation, official development assistance, and school enrolment. The findings indicated that expenditure on education, expenditure on health, and gross capital formation were positively and significantly influence the growth of the economy both in the short run and long run. Whereas school enrolment and official development assistance have negative and statistical significance effects both in the long run and short run. Furthermore, labor force coefficient is positive but insignificantly affects the economy in the long run and short run due to the lower productivity of the labor force.

Wubet (2006) employed Error-Correction method to study the impact of human capital on the economic growth of Ethiopia over the period 1971-2005. He uses average human capital, gross export and labor force as an explanatory variable whereas GDP growth as the dependent variable. The study found out that the average human capital has no significant impact on the

evolution of total output which fails to realize the promise of education on output generation. Similarly, Seid (2000) studied the determinants of economic growth in Ethiopia and investigation results indicated that school enrolment (as a proxy for human capital) variable has an insignificant impact on economic growth. Furthermore, Abdu (2014) investigated the relationship between economic growth and various compositions of public expenditure from the period 1975-2011 using co-integrated error correction model. The study findings understand that health expenditure was positive and statistically significant whereas expenditure on education, agriculture, transport and communication, urban development and housing were statistically insignificant.

CHAPTER THREE

Education and the Ethiopian Economic development Experience

3.1 The performance of Education and Economic Growth

Modern education in Ethiopia started more than one hundred years ago. The government strongly involved in the investment of an education program to increase the expansion of schools for expecting positive returns from it. The total public spending on education in 2017 is increased by 85,761 million birr as compared to 1987. A large number of students were graduated every year in different fields of study. Surprisingly, primary school graduates boosted to 1, 86,352 in 2016. And that of secondary and university level graduates increases to 1,414,205 and 116,802 respectively in the year 2018 as relative to 2000 (MoE, 2017/18).

However, the contributions of graduate students were minimal since the growth rate of the economy is declined from 13.54% in 2004 to 10.24% in 2017. This is due to the country experiences the prevalence of work that is insufficiently productive to yield a decent income. Most sub Saharan African countries including Ethiopia were strongly affected by high level of underemployment rate due to lower skilled workforce.

The Gini-index indicates the distribution of income of an individual deviates from perfect equality (0) to perfect inequality (100) where the country gini index shows an increasing pattern towards 39.1% of the total population in 2015. In a similar manner, 26.7% of the total populations were living under the poverty line which earns below \$1.9 per day. The upward trend of income inequality and poverty is a signal for the under and unemployment of human resource since a large number of workers were not benefited from economic opportunities. The country's total food production is below the holder's demand for food, but still, 80% of the population lives in a rural area. About 10% of Ethiopian citizens were under chronically food insecure in 2010, while 2.7 million needs emergency food assistance and 238,761 children require treatment for severing acute malnutrition (UNICEF, 2014). Having a long period of agricultural education provision on the one hand and the low agricultural production on the other way seems the existence of surplus labor whose marginal productivity is zero. The surpluses labors work full-time but live below the poverty line because of they work below their full capacity.

The main reasons for the low level of food production is still, almost all farmers used a low level of farm technology. They used oxen and digging by hand as a method of production. Farmers do not use modern agricultural inputs such as tractors and irrigation inputs because of the limited income they have. The low income of farmers discouraged their demand for nonagricultural goods and services which also indirectly reduces employment in the non-agricultural sector. These all reduce their productivity and then prone to poverty (Eden et al 2009). The cause and effect of the problem seems a virtuous cycle. Therefore, the provision of agricultural education does not have an impact on the growth of the economy.

More importantly, similar to Jeemol (2016) findings in India, the existence of clear skill gaps among workers in Ethiopia was a major factor for the low production in every sector of the economy. It is also known as the underemployment of labor force. There are three kinds of skill gaps that are highly encountered when we survey the labor market. First, **over-education**: where over-qualified persons are hired for jobs that do not require such qualification. It is a state of being skilled or educated beyond what is necessary for a job. The employer needs to hire the over-qualified workers because they expect these workers are desirable and have high skill, but in reality the overqualified persons are unable to turn theories into useful strategies. Even if they are self-employed, they were not productive since their extra input requirement is larger than their marginal benefits. For instance, a postgraduate in economics is hired for a bus driver or hairdresser. But, to become a bus driver or hairdressers do not require a training period as much as economics education. In addition, an economist may not have a technical skill for being a driver or hairdresser.

Second, **Skill mismatch in Technical education**: where persons graduated in technical fields like agriculture, engineering and technology end up in jobs that do not require that training. For example, an agricultural scientist appointed as a director of a firm which is the function of the management professionals. But if the scientist works in his field, they may develop agricultural technologies such as new methods of production that would increase agricultural production. Similar scenarios are applicable in the other education professionals.

Third, **quality skill gap**: where firms hire graduate students but the firm complains that the inadequacy of skills of workers in their field of study. Due to this, the firm may incur additional costs to train their workers. For instance, graduates in commerce are required to be trained in the accounting procedures of the firm. While the training has not given, somebody who works in an office may have done nothing per working hours of a day since they are not creative and idea generator, but they are waiting in the office with the full working hours.

All the three kinds of skill gap resulted in low production because their marginal cost is higher than the marginal benefit. Because the workers contribution in their field of study to the economy is low, but they consumed a higher cost and training period. This kind of skill gap understands the prevalence of learning crisis in Ethiopia because the education does not sufficiently prepared students adequately and the economy does not efficiently utilize them. Learning shortfall during education year leads weak skills for the workforce.

3.2 The Nature and extent of educated unemployment in Ethiopia

In addition to underemployment, the country labor forces were dominated by educated unemployment. In every year, thousands of student population leaves from primary school, secondary and tertiary education without preparing them to the world of work. The size of educated unemployment not only so high currently but continues in the future (Marta, 2012). Educated unemployment refers to the number of educated school leavers who are unemployed but able to and searching for a job (ILO, 1983).

Unemployment measures the extent of unutilized human resources in the economy in a given period of time (CSA, 2018). It indicates the quality and quantity of human resources a nation has and should be used to promote economic development, but not actually used which has special and economic implication. No nation can develop unless its labor force is engaged in gainful employment. Unemployment of human capital negatively affects the health of an economy through the reduction of the total output produced and expansion of extreme poverty (Maqbooletal, 2013).

In developed countries, the likelihood of unemployment decreases as the educational level increases (Baah-Boateng, 2015). But the reverse is true in developing countries. For instance, the

studies of Kaewkwan and Deki (2017) indicated that lower secondary raises unemployed by 1.7%, higher secondary by 2.7%, degree, and masters by 5.5% at 1% level of significance in Bhutan.

3.2.1 The extent of educated unemployment by educational level

Education opens the gate of employment into attractive jobs for the individuals and the human capital theory stated that increasing the level of educational attainment increases the chance of being employment (Maltheni, 2008). Yet, there are many thousands of educated people roaming the streets and various offices in search of a seemingly unavailable job in Ethiopia. The total unemployment levels by different educational attainments in Ethiopia were presented in the following table.

Table 3.2.1 Unemployed Population of Urban Areas Aged 15-64 by Literacy Status and Educational Attainment

Year	All illiterate	Total literate	Grades 1-8	Secondary completed + not	Preparatory	Certificate Completed + not	Diploma or Degree Not Completed	Diploma Completed	Degree Completed and above
1999	181,605	680,182	333,557	131,639*(9-11)	185,982*(12 com)	31,751* beyond grade 12			
2009	233,213	868,806	386,785	328,441	12,235	28,164	65,761-diploma and above		
2013	189,782	996,151	428,962	368,107	32,988	30,901	19,087	85,471	30,033
2018	199,104	1,455,029	539,952	576,013	54,155	41,099	61,929	126,072	116,908

*Note: * for the 1999 data, 131,639 persons were from grade 9-11 in the old curriculum, while 185,982 unemployed is those completed from grade 12, and 31,751 unemployed is beyond grade 12. In similar manner in 65,761*- indicates unemployed individuals who is diploma and above in the year 2009.*

Source: CSA NLF statistics

The table 3.2.1 illustrates throughout the survey period, the overall unemployed among the literate person is higher than the illiterate person in urban Ethiopia. The reasons for the lower unemployment rate among the illiterate is due to they are mostly deciding to engage in self-employed and other works like household helpers on an unpaid basis or lower wage. Poor skill

among the educated are difficult to create job by them rather they are looking for salaried government jobs (Rabten, 2014). The demand for job seeking in the government sector was higher than the private sector for securing the retirement benefits and job security. But the economy does not provide sufficient salaried jobs to absorb all the growing job seeker.

The primary school and secondary education completers were gone up though the rate is higher in secondary education because those who don't pass the national examination in grade 10 could not find any job. Unfortunately, most secondary school female completers are migrated towards Arab countries for searching a job. They are not benefiting from attending primary and secondary education. Therefore, education in secondary school is nothing relevant than the creation of the unemployment.

The size of unemployment in technical education certificate completers and not completers were increased from year to year ahead. Thus, the government effort on solving the unemployment problem in TVET graduates by integrating the Technical and Vocational Education Training with MSEs was not realized. Even, the trend of tertiary educated unemployment including university level is so staggering over time. There was no significant difference between degree holders and unemployment rate (Applegate et al (2014). Thus, the rise of educated unemployment rate is emerged from lack of technical and core skill as well as soft skill accumulated among school leavers during their education period. Rather the student wants to optimize their schooling level because it serves as a signal for employers.

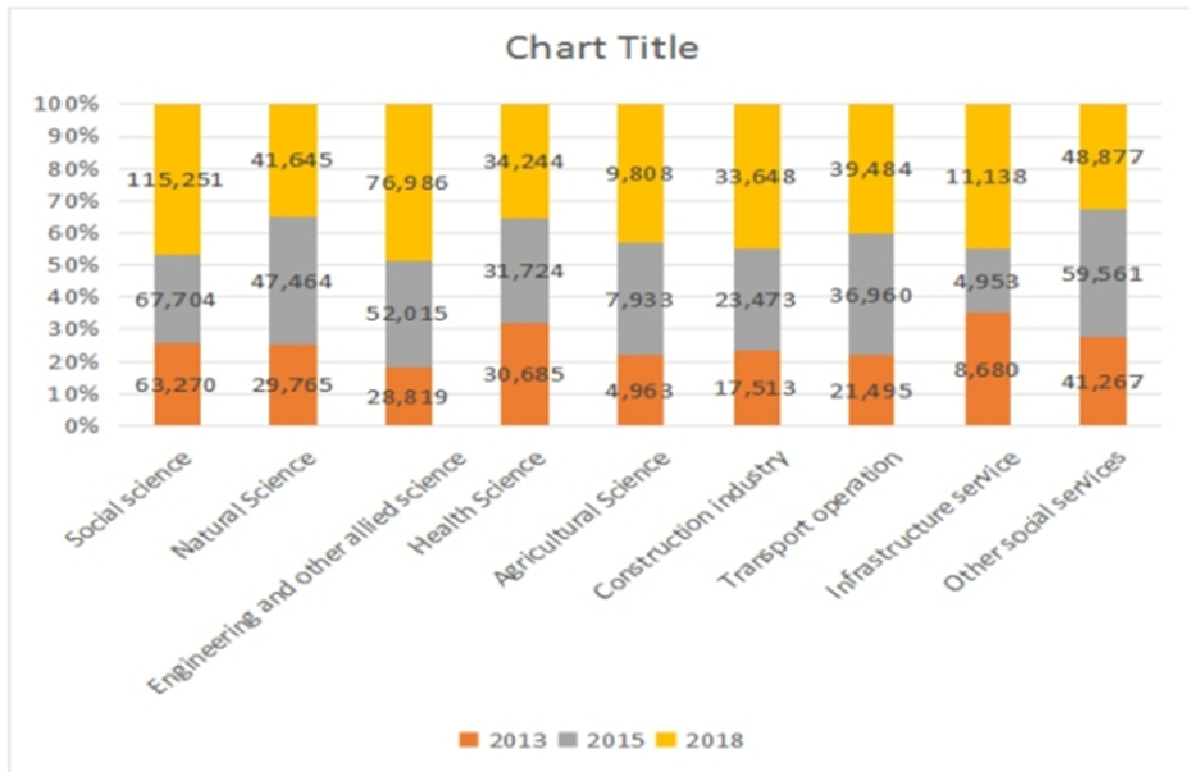
Hearing this much news about educated unemployment makes the saddest. Therefore, the premise of human capital theory of education which has been discussed in the last chapter may not work in the Ethiopian context because the graduate students with an additional schooling become dissatisfied and abject as they cannot get gainful employment (Aja, Prisca; 2017).

3.2.2 Trend of educated unemployment by major training groups

In the case of training status, the trend statistics of the number of unemployment in different fields of study were persistently continued. The reasons for the prevalence of such kind of unemployment were viewed as the poor professional focus of the subjects what they taught (Moleke, 2010). Most students are graduated without having professional skill in their field of

specialization but they are equipped with academic knowledge. To see the trend in the Ethiopian context, the following figure clearly puts the number of unemployment by major training groups.

Figure 3.2.2 the trend of Unemployed Population Aged Ten years and above by Major Training Groups.



Source: own computation from National labor force survey

As the graph indicates the number of social science and engineering graduates were the most affected by unemployment. The components of other social service (ambulance and other emergency care service, hairdressing and fashion designer, music, police, secretary, video and photography), natural science, components of transport operation (aircraft machine, automotive installation machine, bus deriving and management, taxi deriving, automotive an technology), health science and construction industry, agriculture and infrastructure service training group respectively contains the largest share of unemployment next to social science and engineering fields.

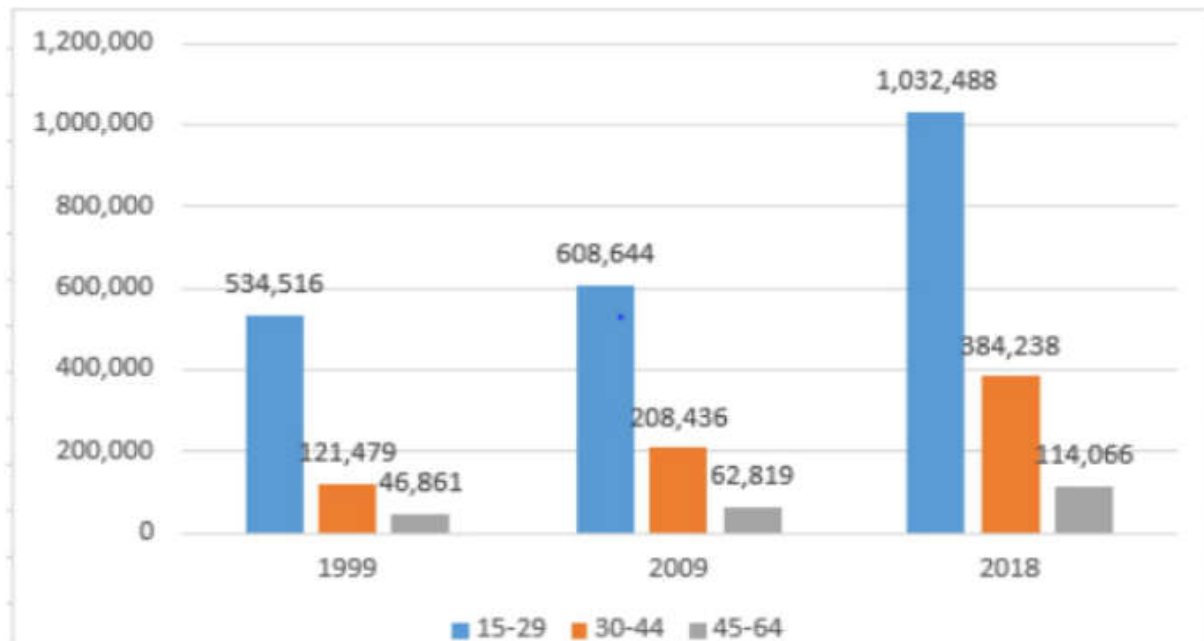
The highest number of unemployment among engineering and lower for agriculture field does not mean that the creation of more jobs by agriculture but the highest number of trainees enrolled into engineering field and lower for agriculture. This information understands that there are unevenly distributed unemployment in all field of study even in technical fields such as engineering and health. All the trained population in all fields of study does not have a skill relevant for job creation.

After spending some years in primary and more than 15 years in secondary education, it is rather unfortunate that they spend their time looking jobs in the state sector. Even the science and engineering graduates which consumed a considerable amount of spending compared to the other lower years of schooling become irrelevant for the economy. Therefore, access to training by itself does not have guarantee for employment. Thus, the trend avails that the Ethiopian education training system is a driver of loss.

3.2.3 Educated Unemployment by age groups

The total literate unemployment by age-specific gives understanding more about the level of educated unemployment in each age cohort. These different age-cohorts beyond the youth who are in the labor force were need to be investigated to understand their cause and impact for the economy because they are already included in the labor force. In addition, most unemployment papers in Ethiopia were worked on the impact of total unemployment including the illiterate in general and youths in particular. None of the studies have been conducted separately on the cause and consequence of educated unemployment. For this information, the following figure details the depth of educated unemployment by age-specific groups.

Figure 3.2.3 the profile of total literate unemployment in urban population by age category



Source: own computation from NLFS

Despite the size of unemployment in the youth aged group were higher, the number of the other aged group also significant. The total numbers of unemployed beyond the youth age group were so high that have a negative outcome on the economy. It's not easy to say the size of unemployment beyond youth age cohort is low. More than four hundred people without a job has a high negative implication for the health of the economy.

3.2.4 The consequence of educated unemployed on individuals and families

A person without jobs may not have the income to find basic needs like food and shelter; unable to cover household expenditure; lack of nutrient food intake that have an influence on their health (IFPRI, 2008). In effect, Family disruption and marriage dissolution because of disrupted communication and lack of respect for unemployed fathers from his wives and children could arise (ILO, 2011). psychologically, individuals would be affected by daydreaming, drug abuses, loss of mined memory, incapability to cope up with problems, decreasing the value of self-worthiness, feels a sense of hopelessness (Clark, Oswald; 2002). The following table summarizes the effect of unemployment on individuals and families faced during their jobless time in 2018.

Table3.2.4. The effect of educated unemployment on individuals and families faced during their jobless time: 2018 NLFS

Types of problems	Number of unemployed individuals
Decreased household personal income	788,515
Unable to cover household expenditure	354,624
Unable to send children to school/cover school expense	21,991
Family dissolution	14,825
Getting stress	108,171
Hopelessness	165,313
Exposed to a different addiction	10,432
Hunger and lack of clothing	11,698
Isolated from social participation	18,814
Fed-up looking for a job	138,082

Source: 2018 National Labor Force Survey

The survey understands that a large number of the labor force were not self-sufficiency. Rather they are affected by different problems. These problem affected individuals not only reduces their standard of living but creates social instability. The inability of the school leavers to find gainful employment tends to engage in criminal activities such as violence, robbery, prostitution and pick-pocketing to survive their lives in the society which leads social stability (Lipsey, Chrystal; 2011).

3.3 The growth of long-term Underemployment and Unemployment

The Ethiopian labor forces were characterized by underemployment and unemployment which are responsible for the slow growth or stagnation of the economy. The effect of underemployment is similar to unemployment. First, both cause higher poverty levels. Without adequate income, families don't buy as much. That reduces consumer demand, slowing business

growth. As a result, the nation’s gross domestic product is lower, as is job growth. It's a vicious cycle.

If underemployment continues, workers lose the ability to update their skills with on-the-job training. They may not be able to return to their former field without training. Some retrain for different fields. Others downscale their lifestyle and accept long-term underemployment.

Additionally, relatively well-educated populations are also affected by the incidence of long term Unemployment (a period of unemployment for more than six months). In the beginning, the short term unemployment breeds more unemployment which in turn breeds permanent unemployment which is called “Scaring effects of unemployment.” The skill and knowledge of the individual were losing and depreciate as the unemployment period increases. The following table summarizes the duration of long term unemployment.

Table 3.3 Unemployed Population of Urban Areas Aged from 15-65 by Duration of Unemployment.

Year	Duration of Unemployment (In Months)	
	7-48	>48
2009	532,293	227,023
2018	744,468	612,715

Source: NLFS

The educated populations were strongly affected by the loss of experience. The number of people who are without a job from seven to 48 months increased to 744,468 in the year 2018. While those unemployed for more than 48 months becomes significantly increased in 2018 as compared to 2009.

The probability of unemployed workers for getting both formal or informal job, and the probability of transition from unemployment to inactivity increases as the duration of unemployment increases (Ries&Aguas; 2014). For those unemployed who sought a government job were prone to long-term unemployment. For instance, the Ethiopian Telecommunication and

Banking sectors need to hire fresh graduate students. On the other hand, most government and nongovernment organization announce an employment vacancy that has employment experience for more years in related fields. The vacancies who need a fresh student would hire a lower number of workers as compared to the total job seekers, and then many will leave without a job. On the other hand, a vacancy who wants to hire those having work experience excludes those having unemployment experience that left from the first vacancy. Based on this evidence, it could be concluded that seeking government employment exposes students for long-term unemployment.

Despite gains in education access, many schools graduate students were without a job. Even, the marginal productivity of educated employed individuals was very low. As the trend showed earlier, the prevalence of unskilled population persistently increases over time irrespective of education level, training type and age cohort. And it's considered as the wastage of human resources. Therefore, to realize the learning outcome meaningful, the main causes contributed to the creation of skill gap were needed to be examined.

3.4 Causes of educated underemployment and unemployment in Ethiopia

The underemployment and unemployment of the country labor force were the factors that disrupted the health of an economy. It's considered as the wastage of economic resource. It arises several questions; for example is it caused from the programs pursued in school?, Does what is learned in school sufficiently prepare students for the expectation of the workplace? Does the content taught in school is relevant for students for the school to work transition? Therefore identifying the causes of educated under-and-un employment is important for policy makers.

Chris (2016) and Jemol (2016) asserted that the education system is the root causes for the creation of poor skill among all stakeholders due to the lack of the relevance of the teaching curriculum. The situation is confidently working in Ethiopian where the education curriculum lacks relevance for developing the workable skill. The provision of education without integrating practical oriented content could have not been useful for developing skill (Dimitruv, 2012; Mjema, 1997). The higher level of unemployment in a developing country does not mean the

absence of jobs but lack of skill and necessary ability to acquire the available jobs (Samji et al 2009).

In Ethiopia, schooling does not produce enough learning since the education system is not competency based. This learning crisis leads people going to leave the school without acquiring technical or soft skills which translate them towards the world of work with lower skill (Smith, 2014). Where the education is not competency based approach, the end result would certainly have resulted learning crisis; in essence the education produces unskilled people.

Depending on the idea of Christ and by reading different materials, the quality of education system was found to be the basic cause for the creation of skill gap among learners through its effect on the subject content and method of delivery. In particular, absence of vocational subjects in most educational stream, absence of student apprenticeship program, shortage of basic inputs, poor industrial linkage and low quality of teachers were found to have the factors contributed to the prevalence of low skill. But, these factors are interrelated with each other: the absence of one factor leads to the emergence of the other. The detailed explanation has been followed.

Poor enrollment of Vocational courses:

In Ethiopia, most courses delivered from primary to higher education level were academic oriented except some technical subjects such as health, engineering, and agriculture. There are no vocational subject provisions under primary and secondary education levels. For instance, learning biology, chemistry, history and civics subjects for primary and secondary school completers could not be relevant for employment creation. But agriculture education and handicraft (the most important education for our country) were not provided in these grade levels. Attending academic subjects did not serve for competency building. It may not provide confidence and technical knowledge for the stakeholders to generate economic value (UNESCO, 2012; Sanisah, 2010).

Basically, these are emanated from the country education system objective. It is to make students equipped with theoretical knowledge and finding their levels wherever they go. To upgrade their academic achievement through memorizing the contents to be taught, most similar courses were provided downscaling from higher education to secondary and then primary level. For instance,

chemistry and Biology subjects were delivered from grade 7 to university level. Still, the content is the same except its width that makes students consumed their time for schooling not for skill. These develop the skill of memorization of concepts but irrelevant for creativity and generating innovative ideas. The existence of idea poverty persistently appears in Ethiopia that always retards back the country development.

Having theoretical knowledge is good, but it is not used for preparing food; it's not relevant to the needs of the 21st century; it is outdated for the needs of the present generation. Subject combinations for students are not based on their interest in job aspiration and current demand of the labor. They are not reoriented to see all jobs as important while in education to prepare them for work. On the contrary, the functional education relevance is connected to practical oriented skill, dynamic and problem-solving skill, strong entrepreneurial ability, and creativity, commitment with strong teamwork and interpersonal skill. Knowledge without skill is nothing contributes to the economy. Rather a blend of theoretical knowledge with practical skill needs to be more.

Method of Delivery

Though the education is student-centered, in practice there is a teacher-centered approach except in some teachers. The teacher gives an introduction, delivery of main lessons and summaries depending on the conventional lesson plan and supervision format within the school. The teacher also takes the higher share of instructional time by explaining the theory and writing notes about it on the board; while copying notes from the board, responding teachers question and group discussion were the functions of students (MoE, 2011). Since the curriculum focuses on fact, the opportunities for learning by the teacher are accessing the right answer. The only interactive possibilities are teacher directed question and group discussion.

The student-centered is seemingly applicable only for doing assignments in group and individuals and with little or no classroom presentation of what they have done from reading different books not from doing projects. However, the enrolment of students in apprenticeship and internship activity towards industries and enterprises were very low. Thus, the teacher training and student assessment do not consist of the need

starting the practical application of their education. Rather, the assessment techniques are quiz, monthly and semester-based exam to recall the given facts, and this will be the end of learning and education for the given class (Akalewold, 2016; Amare, 2008) (97-694). This assessment technique reduces the creation of practical knowledge and capacity buildings of the recipients (WB, 2017).

Poor industrial linkage

Unlike industrial countries where they struggle with the school to work transition and how to best prepare students for skilled workers, the situation is very weak in Ethiopia. Most school teachers had no official interaction with captains of industry and enterprises to discuss areas of concern by industries and feedback on the progress of products provided by schools. The lack of collaboration within the various stakeholders creates a wide gap between the content of the course delivered with the relevance for the job market. For the vocational courses such as TVET and engineering courses also end up in classroom-like academic subjects without industrial apprenticeship and makes learners difficult to turn theory into practice.

Engineering students have learned in class how the airplane is made or how relevant machine was designed, how a building is constructed, but they cannot able to do these. In ICT courses, students only taught the theoretical part resulted in low skill to create and correct the misused system software. Therefore, then students could not have the technical skill (skill for being an entrepreneur and productive) even from the vocational courses. After all, TVET and other vocational graduates become job seeker and underemployed (Ezit, 2014).

Lack of equipment for training

Absence of basic equipment is also one obstacle for skill development. For some laboratory courses such as chemistry and biology or others were provided without experimental testing. All the theories have been taught in class whether ensuring it is really working or not. For instance, the teacher taught that water is composed of two hydrogen molecule and one oxygen molecule. When I asked him on what is H₂O? He responds to me as H means hydrogen and O-is oxygen. I

am continuing my question; could you show me how water is created? He said laboratory is needed, and am believe him and pass it until the experiment is available. Rather, he taught the characteristics of water than showing how water is created.

Unfortunately, I have learned several times starting from grade 7 until now what H₂O means, but I never saw how H₂O is created. I could know the characteristics of water such as tasteless, odorless and colorless from the natural gift of water available in different lakes. This could make learning is meaningless if the new finding is added to the existing one. Chemistry graduates spent more than 8 years of schooling but most of them could not know the practical aspects of it. But their schooling becomes higher. The same trend is revealed in other subjects. Therefore, the skill thorough it employment and productivity of the educated population were low.

Unskilled teachers

Furthermore, a large number of school teachers have low quality and knowledge regarding the practical application of the course contents what they taught like chemistry discussed above. This process produces students graduated with unskilled knowledge. Unfortunately, the new graduates may be hiring for teachers again but still they don't know in practice on how the theory works really or not. The unskilled teacher duplicates the problem on students and becomes a vicious downward spiral. This is a determinant factor for unskilled labor force growth in Ethiopia.

Generally, the Ethiopian Economy is characterized by the underemployment and unemployment of resources. Since the education system is academic oriented approach, it produces unskilled labor force and are not relevant for the needs of the economy. The paper concludes "Education without skill is very similar with a home without roof." Under this system, achieving the country macroeconomic objective such as to become a middle-income country group in the year 2025, and achieving sustainable development goals (SDGs) (2015-30) would be a talk rather than an action. For example, eradicating poverty and hunger would not be possible. Rather the growing population lives with poverty throughout their lifespan. Therefore, this statement is directed for us to say the education system in Ethiopia is a factory to produce unemployment.

CHAPTER FOUR

The Recent Revisions of the Ethiopian Educational Development and International Experience

4.1 The Desk Review of the Ethiopian Educational Road-Map Development (2018-30)

In the contemporary economics literature, human capital accumulation is considered as one of the major determinants of economic growth. However, the statement does not work in Ethiopia, because the country economy is dominated by poverty, income inequality, and unemployment. The findings of this study show that the education system and human capacity buildings of the country followed the wrong path since the system produces a significant number of unskilled manpower. Thus, to reduce the 1994 ETP problems and make the human capital theory sensible, the ministry of education designed a project called “Ethiopian Education Development Roadmap (2018-30)”. The road map has two parts. First, it reviews the past education performance and tried to find gaps. Second, it forwards different measures to be taken to develop the quality of education.

4.1.1 Findings of the new Education Roadmap

Access: even though there is an expansion of primary and secondary education and enrolment rate. There are many numbers of school-aged children out of school, children with disabilities also become unavailable for education, and identifying the gross/net enrollment rate for creating the clear picture of how different age groups start schooling. Enrollment in the second cycle primary education is less than the target. It also finds that the enrolment of grade 10 and grade 12 completers to join the TVET program is below the desired.

The problems faced in accessing primary education are composed of demand and supply factors (Alemayehu, 2014). The road map gave identified child labor and peer pressure for the demand-driven failure, while shortage schools and hiring of teachers were considered as the supply side problems.

Equity: the road map also identified equity in terms of the unequal distribution of education availability for females/male, one region to the other, in urban or rural. For instance, female students in urban areas could more attend in education than the rural counterparts, there are a lot of schools were constructed in one region relative to the other/ urban than rural. Therefore the gaps in expansion and enrollment rate in this context were the main issue.

Internal efficiency: This is related to finding the promotion rate, dropout and repeating rate of students from one grade to the next since the efficient student reduces the cost of education. For instance, the dropout rate is higher in grade 1 and 5, while the repetition rate is going from grade 1 to 8. Since improvements were not observed on the reduction of dropout and repetition rate.

Quality: the quality education is measured by teacher qualification, pupil-teacher ratio, pupil section ratio, and pupil textbook ratio. For example, a teacher who needs to teach in secondary education must at least have a qualification of Bachelor's degree. Student teacher ratio in secondary education is 1:40; otherwise, the quality would be deteriorated. The student-teacher ratio and teacher-classroom ratio were higher in the country. The overcrowding of students per class and classroom per teacher reduce the support provided for students, their boringness and leads to the poor quality of education service.

The review indicates that the poor quality of education infrastructure such as (building, water, electricity, toilet, clinic, library) were the main determinants of deterioration in the quality of education.

Appreciating the existing education system

In terms of subjects, since the focus of the current education policy is 70% science and technology, and 30% for social science. The road map tried to find gaps that affect its implementation. Social subjects are directed to awareness and to keep culture but biased towards keeping urban cultural value than rural (MoE, 2011). Then the relevance of the social subjects for rural people was poor.

The review does not get challenged on the current educational theory and curriculum. Rather the ministry of education and regional office curriculum expertise worked strongly on the curriculum

development and its content exclusively on academic discipline. This is because the theory of academic knowledge is the most believable and relevant in the future (Leu, 2000), but it's the most unexamined part. According to Leu, Knowledge is fixed and composed of discrete and irrefutable pieces or facts or reality. It is constancy and stable character throughout the world and over time. Thus, downscaling the curriculum from grade 9 and 10 toward the primary education curriculum, and that of higher education towards secondary education to advance the students' academic knowledge were the main premise of the review.

From the subjects, the importance of civics and History education were the most recognizable subjects by the review. Since Ethiopia is a homeland of multiethnic society and denying the diversity of ethnic group leads civil war and state breaking (Asayehegn, 2012). Thus to keep unity to diversity, Civics education given in social studies as a subject curriculum to introduce students to the knowledge of addressing the country national identity, appreciation, and understanding of Ethiopian history, its people, its culture, values, commonalities, and differences that make Ethiopia unique. This also creates a tolerant society and developing social harmony and successful integration for strengthening the sense of patriotism (pride in one's country) which is essential for defending the rights and freedoms that democratic political guarantee against external aggression (Banks, 2008).

4.1.2. Conclusions of the Road-Map

The road map conclusions are focused on forwarding ways to address the challenges that are already identified such as access, equity, efficiency, quality, and relevance by increasing the education expenditure. Even though the accessibility of education was improved compared to the past, there is a need for increasing schools to the enrollment of students to reach the target. This is because the number of enrolment rate of students in every education level including TVET education was below the desired. To eliminate the gender gap, a number of school gap from urban to rural or from region to regions, social class and ethnicity, the road-map concluded there is a need to provide fair budget allocation.

In addition, in order to keep the internal efficiency (dropout, repetition, and promotion) sustainable, ways of downscaling the curriculum to make students equipped with academic

knowledge were viewed as one method of improving efficiency since it reduces the dropout and repetition rate. This technique helps to improve the student's academic achievement. According to the road-map, those students who have higher academic achievement are considered as the higher learning outcome.

To keep the quality of education impressive, it also concluded the need to increase the public expenditure for building schools and other infrastructures such as water, toilet, and electricity and hiring additional teachers. These spending reduce the pupil-teacher ratio and pupil section ratio that increases the delivery of services by teachers. The national standard pupil-teacher ratio and the pupil-section ratio are 40 and 60 students respectively.

It also assures the need to further investigation and strengthens the relevance of academic knowledge because it is considered as a real, no refutable thing in the world. It appreciates the 70/30 science to the social study program and the relevance of the social subjects towards rural society. For example, providing the well-studied civics and history subjects enable the citizen to have the sense of tolerance and respect among them as well as to have the sense of nationality for keeping our country from external aggression. Thus, in order to solve the existing challenges and gaps, the roadmap tried to find such directions as a way of improvement.

4.1.3 Challenges and Gap of the Roadmap

The coming of the new educational road map is important because it identifies the different problems that the 1994 educational system faced to realized including for those who are in the disadvantaged group in terms of educational opportunity. But, the main question to be asked under this part is that; is the new education road map is important to solve the educated unemployment? Is it important to solve skill mismatch/skill gap not? The answer is automatically **no**. if so why the road-map (RM) is challenged again?

The road map critically evaluates the trend of access by the gross/net enrolment rate across the region and country total, the total gender disparity/regional disparity also clearly shown. In addition, the total dropout and repetition rates across the different grade levels were tried to show both in table and graphs. However, it does not review the relevance of the education system whether the school leavers from primary to higher education graduates are employed or not;

whether the education system produced job creator or job seeker citizens; Productive or not; skilled or unskilled. Generally, it did not review the most important thing: The performance of education enrolment and economic growth were not reviewed. Practical skill development was not reviewed. These have to be taken seriously because the major problems always observed in Ethiopia is not lack of school, lack of college and university, but lack of jobs and productivity after education. The problem is not lack of trained workers but lack of readily/skilled trainable workers. Lack of skill reduces job quality, earnings, and labor mobility.

So that evaluation in education should be always performed in relation to the relevance of education for skill development rather than enrollment rate. Therefore, the main question should be how can education be redirected to the economies and social needs of Ethiopia? Or what kind of education will have a more direct effect on generating employment? Therefore this would be food for thought for educational planners in Ethiopia. Thus, to make the education system valuable in terms of skill development, it is needed to revising the Road-Map.

4.2 International experience

Certainly, economic development is the proper function of natural resource, machine, methods and manpower (Shriniwas, Santosh; 2018). Manpower is the most dynamic and crucial input for effective utilization of the other input. Availability of human resource is no guarantee for development, but quality, competent, and ability of this manpower decides how effectively resources can be put to use.

In this section, we look at some experiences from a developed country such as Germany and China that performed best practices in how skill development would be made at every educational level. These countries were taken and would be suitably adopted in the Ethiopian context. They are known for their efficient training systems that have been successful in skill development.

1. Germany

Germany follows a “dual system” of vocational education training (VET). Education is provided in the vocational school and in the enterprise in the form of apprenticeship. The vocational

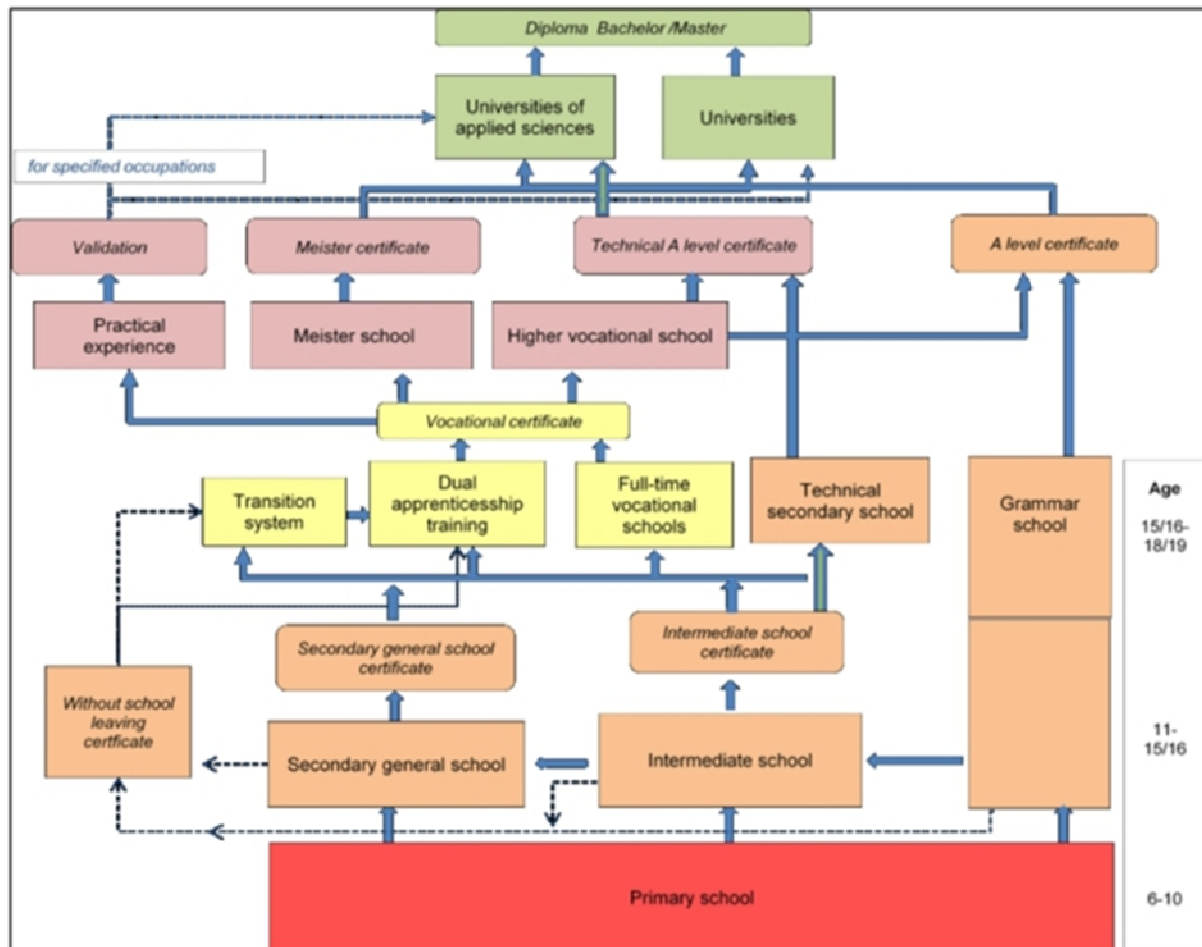
school taught theoretical instruction and basic economical background in the classroom about 20% of student time in relation to on-the-job learning by school teachers. While the company/enterprise provides practical training about 70% of training duration, and the curriculum is compulsory adopted to the conditions suitable to the company. The enterprise education is provided by certified corporate trainers and would assess the students for interim and final practical examination. The dual system integrates the school-based learning in connection with work-based learning thus impart more practical skill to prepare and develop apprentices' skill for a successful transition to full-time employment.

Germany education and VET requires compulsory education up to primary and lower secondary school, but after which there is an option for entering Vocational education and training or formal education. Under vocational training, students have an option for dual apprenticeship training and full-time training. Dual apprenticeship and technical education is a must after upper secondary education. The dual system is more of practical skill aspiration, and the curriculum and training are modified in relation to the change in technology or other industrial changes. Under the guidance of the Federal Institute of Vocational education and training, experts from companies, industrial chambers and trade unions were constantly involved in the process of upgrading curriculum and developing training regulation for the apprenticeship program.

The VET system is financed by both public and private. Enterprises incur the cost of in-company training including equipment and infrastructure and pay remuneration for the trainee based on the collective agreement, while the state government pays the teacher salary.

The system is advantageous for all stakeholders. For the government, it has the only guaranty for the theoretical training in vocational school by hiring a well-qualified teacher and does not incur costs for vocational schools for purchasing machinery and equipment for training suited to industrial needs. Companies train students in real working process and easily incur lower recruitment cost, lower cost of on-the-job training and find skilled workers for employment later as they need. And they don't separately incurred costs for training since they already have expensive equipment for their operational requirements. All costs incurred by companies are considered as an investment. When students trained on-the-job, they become skilled and productive.

Fig 4.2.1 structure of The German education system



For those students who don't take the certificate examination, a transition system is provided for transferring them towards vocational training. The system is when students enrolled in one or two years of programs in full-time VET school (do not directly lead to VET diploma) that offers the opportunity to obtain intermediate secondary school leaving certificate and then they can enter vocational education dual apprenticeship training. Transition system strives the lower secondary and primary people to achieve apprenticeship readiness enable them some form of certificate and act as a bridge measure until they enter regular vocational training.

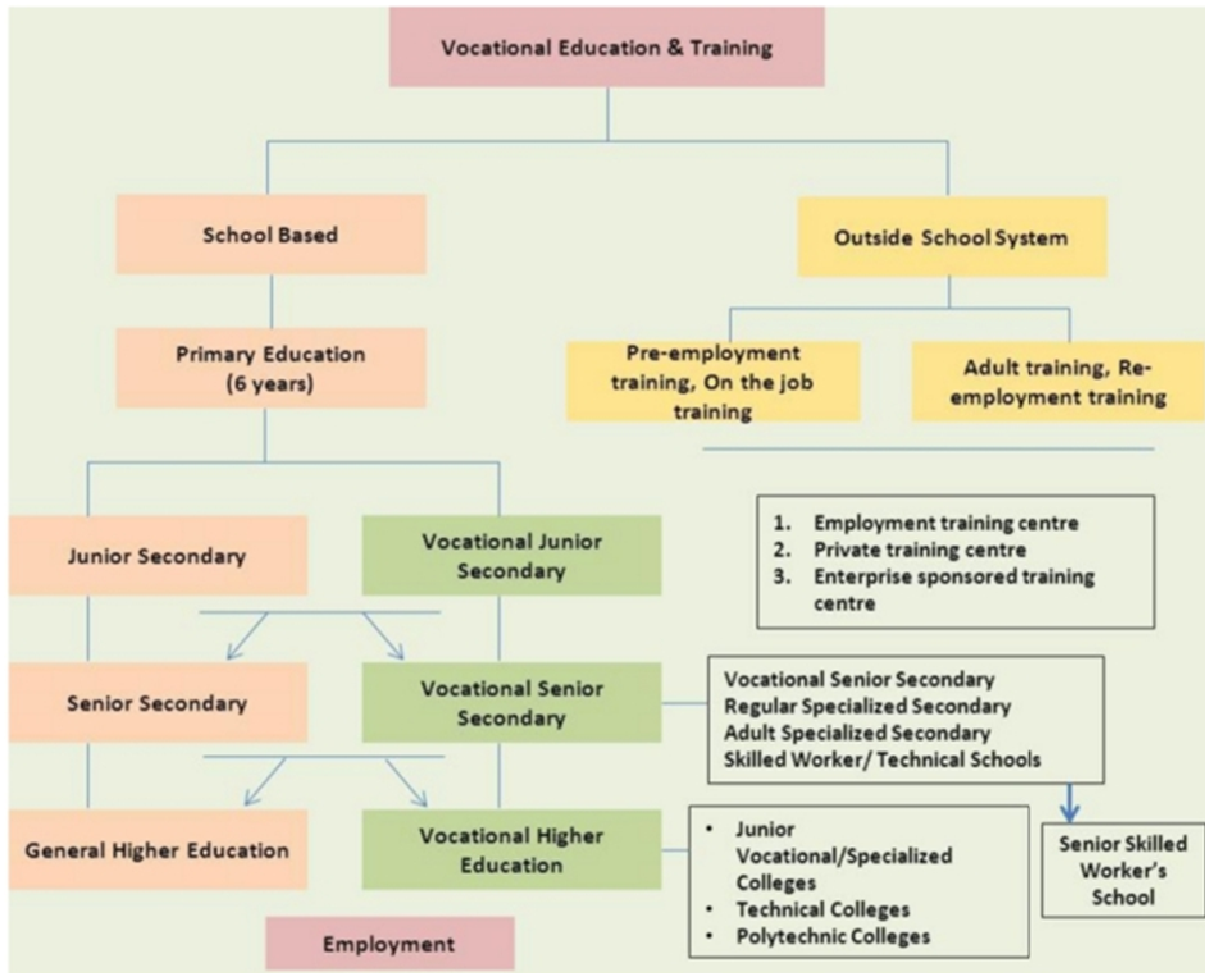
2. China

China skill development has been highly successful and developed at a faster rate. In China, at least 59% of those entering the workforce is skilled, of 39% are vocationally trained (Hao, 2010). Purposely, the China education system or skill development model focuses on vocational education and training to transform the education in line with the market economy. Accordingly, it is important for raising the quality of the education receivers in an all-round way including employment and promoting economic and social development.

The education system consists of education in vocational school and vocational training. The formal vocational education is under the ministry of education (MOE) and has a slight emphasis on theory-based learning. While the vocational training out-of-school is provided by the ministry of human resource and social security (MOHRSS) for post-school, pre-employment and on-the-job-practical training, training and retraining for those out of school or out of work. However, both offer a significant amount of practical education/training for learners.

The education law of China mandates nine years of compulsory education (6 years of primary and 3 years of junior secondary). Vocational education in the school system is provided at three levels: junior secondary, senior secondary and tertiary. China follows double track education and double-track labor system. For education, full-time schooling is partitioned for part-time study and part-time work as an apprenticeship with industries. Whereas for eight hour labors day who work in factories, rural areas or government offices partitioned with part-time work and part-time study in factories and rural areas (Ding, 2010).

Fig 4.2.2 Education System in China: School and out of School system



Source: planning commission “understanding skill development and training in China: lessons for India

Vocational education and training in the school system (Under Ministry of Education)

After the primary, students enter a three-year junior secondary level where vocational education is introduced. Then there was Senior High School Entrance Examination at the end of junior education. Then depending on the entrance result, students with higher scores enter the senior secondary general academic stream and those with lower marks end up in the senior secondary vocational stream. In the senior secondary school; vocational senior secondary, regular specialized and adult specialized education is provided by MOE while the technical/skilled

workers school is provided by MOHRSS. The senior secondary vocational schools trained for a variety of fields in the service sector such as commerce, information technology, management, legal work, and traffic service. The specialized secondary schools provide 3-years certificate courses for skilled and management personnel in the service sector in the field of medicine and health care, educational profession, politics and law, finance and economics, and industrial technology. Whereas, the technical/skilled workers school is a three-year certificate course required for working manufacturing sector and state occupation license (Hao, 2012) in which the learners are being capable of practicing and operating machines and get directly engaged in production activities. Furthermore, vocational graduates from senior secondary school could continue higher vocational training with two or three years of training where advanced forms of vocational training are provided. Relatively a large number of graduates joined the workforce after senior vocational training and some students joined higher education. The employment level of secondary school graduates reached 98.85% in 2012.

The government ensures the teachers in a vocational school are strongly skilled for the modern industry requirement and they are required to spend one month in each year in the industry, or two months for every two years (Lai et al, 2011). According to the 1996 Vocational education law, 20% of the annual education budget was allocated for vocational education and training. All enterprises utilize 1.5% of their payroll for in-service training; otherwise, the equivalent amount should be contributed to governments for adult training.

In China, both school education and vocational training offer more practical training to students. As 1996 vocational educational law, senior vocational education takes 3 or 4 years duration depending on the trade, and each student should spend one year on workplace training during their upper secondary education. The entire TVET system is controlled and managed by industries which participate significantly in vocational training. Enterprise also participates in curriculum design, teacher training and providing training equipment in the school as well as placing students for internship. The government has given various incentives for industry such as allotment of land at a subsidized price and preferential treatment in case of award of government projects to encourage their participation in vocational training.

The government facilitates deciding the curriculum design that would depend on the local needs. In the senior secondary school, 1/3 of the curriculum contains general academic skill defined by the ministry of education, the other 1/3 are nationally defined content associated with a particular occupation, and the remaining 1/3 of the curriculum are determined by the local school level with the help of local enterprise. Accordingly, Trade-related curriculum for primary, secondary and tertiary sectors focuses on 7%, 52%, and 41% respectively.

Vocational education and training outside the school system

Vocational education outside the school system is provided by employment training centers of MOHRSS, enterprise-sponsored training center, and non-governmental training organization. Employment training centers of the local human resource social security bureau provides training for unemployed job seekers, laid off workers and migrant workers, while Enterprise-sponsored training provides for their employees/workers to improve their knowledge base and skill of. Private or non-governmental organizations also provide training for all kinds of participants except school-based students.

The government provides subsidies to a group of workers who have trouble for finding training opportunities for employment such as registered unemployed people, rural migrants, and rural laborers. To ensure the poor students to attend in VET school and overcome their financial burden, the government offers 1500 Yuan per year per student to cover two years of the Secondary vocational school, but starting from 2009 all senior secondary vocational schools make free of cost for all students.

Additionally, Chinese education policy is based on lifelong-learning by delivering literacy and training for rural workers. The government provides applied technical training in agriculture such as Green certification training and entrepreneurship training to rural workers engaged in agriculture. In 2011, there were 103,420 technical training schools for training farmers and around 35 million registered workers participated. The strong extension system, coupled with training for a rural agricultural worker not only improves agricultural production but also provide an incentive for rural workers to stay back than to migrate to cities. These further reduce the rural-urban migration of untrained workers.

CHAPTER FIVE

Conclusion and Recommendation

5.1 Conclusion

Education is the most important variable for human beings. It gives a greater opportunity for individuals by earns income for living and improving their wellbeing. The basic premise of the inclusion of human capital in the growth accounting stated that the role of increases in education for improving productivity of an individual depends on the level of skills acquired while in education not the level of schooling. An individual with high levels of education consistently acquiring high skill and would have a larger productivity capacity and employment generator. According to the theory, education is considered as the engine for the socio-economic developments of a country through enhancement of employment and productivity. Being productivity of workers is achieved by education investment through its effect of increasing knowledge and skill for work.

The provision of modern education in Ethiopia has long been one hundred years. However, these important advantages of education are not realized in the Ethiopian context as compared to the traditional education that started before modern education. The empirical findings confirmed the negative impact of education on the growth rate of the economy. A large number of the populations are affected by poverty. These were due to the existence of large number of underemployment and unemployment of educated from primary to higher education level over time. Thus, the main causes identified for the prevalence of the negative relationship were the misdirected education system of the country through poor enrolment of vocational courses, low quality of input and absence of industrial linkages. As evidenced in the body of the paper, the new education road map focused on reviewing access, equity, internal efficiency and quality which is the same as what the existing education system works. No new thing is added.

5.2. Recommendation

The Ethiopian government takes measures on the expansion of the schools starting from primary education to the highest level and Technical and Vocational education Training (TVET) to improve skilled peoples. However, currently, the country is strongly affected by educated unemployment and underemployment that makes the country investment in education becomes non-returnable. The recent educational roadmap also failed to review the skill development challenges of the country. Therefore, to make education a viable investment, the following recommendations have made.

Thus, to make an investment in education on the right track on the needs of the growing economy, it needs to revise the Current Educational Roadmap in line with the skill development mechanism. It has been advisable for the country to focuses more on vocational education for the development of industries and manufacturing success as in the cases of China and Germany. Study of the skill development model of China and Germany can be the best experiences for Ethiopia education skill development.

The country should restructure the education systems of primary and secondary education by reducing the duration or years of education in line with the China model. These issues rise deliberately because currently the academic courses are provided repeatedly from primary to upper secondary and even higher education that takes a huge investment cost without gaining additional benefits than increasing unemployment rate at higher education graduates.

The schools should aware of the objectives of the subject in relation to its end uses, what would be the benefits of the courses after education and sticking to it. The schools and education system has to be designed in the direction of human capacity building for generating novel ideas. In addition, the government should invite International agencies to encourage participating in awareness creation by workshop presentation in international case studies about the contribution of vocational training in improving skill development and its relevance. All Chinas models of training should be applied in Ethiopia for including provision of training rural workers for specific skills to be productive and restrict rural-urban migration.

Vocational education should be integrated starting from secondary education to higher education, and the content of the course should be practical in line with the industry requirement and has to be constantly upgraded based on the feedback from the industry. Agriculture and craftsmen courses should be integrated from primary education like Germany. The country education policy needs to be in line with the present and future employment opportunities, and even in higher education, there should be a focus on revising the curriculum and offering relevant new courses. Encourage more students to attend vocational training for reducing the fear of future academic graduate unemployment. Vocational education tends to students better suited to apply than academic knowledge, hence it is considered as the backwater for skill development for all types of students regardless of normal or disabled. Providing an effective curriculum moves through the process of what students need to know, do and demonstrate; acquiring basic techniques, practicing and building skills.

The Dual-system of Germany has to be introduced for developing apprenticeship for vocational courses. It needed to be encouraged industry and firms for the apprenticeship program to develop relevant skills and workable knowledge, Competency and mastery of the trade are more important than the time spent for instruction. Attention also make on encouraging the industry and enterprises to actively participate in training through the provision of apprenticeship, curriculum design, adopting innovative skill development delivery mechanisms, and teacher training. It needs to do much for involving them in skill development and workable knowledge and to resolve the skill-related challenges today. The educational curriculum has to be designed in consultation with industry leaders together with educational experts.

The partnership of education institution and industry has to be strengthened in which the education institution develop a demand-driven curriculum that will produce skilled students suitable for job creation and the industry. It encourages high school teachers to work in the industry from time to time and enable them to line the education offers in relation to practical life. The education institution should set up a committee for the development and implementation of integrated industrial attachment for students in general education and in training. At the same time, the industry has to set up chairs for education institution to serve as a platform for sharing ideas and promotion of creativity and innovation.

The ministry of labor and employment has to follow the China model. It has to be involved in training and re-training to those who are unemployed and rural households for imparting skills to enable them to secure a sustainable earning, and re-training for employees once employed to develop lifelong learning.

The government in education has to be innovative in relation to upgrading equipment and skill development arena than building schools afterward. Expenditure on school focuses on fulfilling basic instruments needed for the training such as experimental or laboratory materials, and other supportive machines to the training.

Since it is not feasible to cover the total skill development expenditure by the government only, China financing model should be introduced by obliging the industry and enterprises incur 1.5% of its payroll for skill development purpose. Encouraging private and multinational companies towards skill development in our schools is advisable.

Quality of learning outcome depends on equipment need for the training, the strong and relevant curriculum or courses content and its apprenticeship practice. The feasible activities of the three things ensure skill development and would realize the benefits of education.

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