The Role of Human Capital in South Korea’s Education: Lessons Learnt for Egypt

A Thesis Submitted to the

Public Policy and Administration Department

In Partial Fulfillment of the Requirements for the Degree of

Master of Public Administration

Submitted by:

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Supervised by: Dr. Khaled Abdelhalim

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The American University in Cairo

School of Global Affairs and Public Policy
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ABSTRACT

The American University in Cairo
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The Role of Human Capital in South Korea’s Educational Reform: Lessons Learnt for Egypt

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This study investigates educational reform and its role in enhancing economic development in developing countries, learning from the case of South Korea which implemented its educational reform since the 60’s. In the case of South Korea, educational reform was one of the pillars in transforming it from a developing country in the 60’s to a developed one starting from early 80’s and it was examined to show the relation between education and economic development. On the other hand, the educational system in Egypt was examined to tackle the main problems and identify the needed reforms for the development of the country. This study showed that importance of linking between economic and education planning, building higher education on a sound foundation of high-quality schooling, and having a mix between public and private higher education system. These findings were the main features of South Korean experience that Egypt can benefit from them through implementing them in its educational system.
Chapter 1: Introduction

1.1 Background

Education is one of the pillars of development in any country. Education is the foundation on which a person’s life depends. It supports the growth of civil society, democracy, political stability, and allowing people to learn about their rights and acquire the skills and knowledge necessary to exercise them (The Center for Global Development, 2002).

In a country with a population close to a hundred million, the literacy rate (age 15 and over can read and write) of the total population is 73.8%, the literacy rate among male population represents 82.2% while the literacy rate among female population 65.4% (2015 est.) as of the total population (CIA World Factbook 2017). On the other hand, the following table shows the number of illiterate population per each gender as of 2013:

<table>
<thead>
<tr>
<th>Illiterate population</th>
<th>Total</th>
<th>Male</th>
<th>Female</th>
</tr>
</thead>
<tbody>
<tr>
<td>15-24 years</td>
<td>1,283,890</td>
<td>522,209</td>
<td>761,681</td>
</tr>
<tr>
<td>15 years and older</td>
<td>14,804,370</td>
<td>5,127,417</td>
<td>9,676,953</td>
</tr>
</tbody>
</table>


The school-age population by education level shows the domination of the primary level over any other level of education. The number is also being decreased over the more developed levels of education.

<table>
<thead>
<tr>
<th>Education level</th>
<th>No. of Students</th>
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<td>9,658,007</td>
</tr>
<tr>
<td>Tertiary (university)</td>
<td>7,918,929</td>
</tr>
</tbody>
</table>


Economic development has several definitions and can be measured through many tools. One of the definitions stated in the “Glossary of International Economics” book states that it is the "sustained increase in the economic standard of living of a country's population, normally accomplished by increasing its stocks of physical and human capital and improving its
technology” (Deardorff, 2014:206). This definition stresses on the importance of human capital and its role in the development process. The importance of human capital may include the quality of their health, the social standard of human, or the level of education that have access to. Throughout years many studies have stressed on the significance of education, quantity and quality, on the level of economic that countries reach through it, for instance, Lucas (1988), Romer (1990), Gupta and Chakraborty (2004). In addition, “all countries, regardless of their national wealth, stand to gain from more and better education, providing every child with access to education and the skills needed to participate fully in society would boost GDP by an average 28% per year in lower-income countries and 16% per year in high-income countries for the next 80 years” (OECD Report, 2015). To attain such kinds of skills, students should have access to a high level of educational standard since today’s students need “twenty-first-century skills,” like critical thinking, problem solving, creativity, and digital literacy (Brende, 2015).

1.2 Statement of the Problem

In Egypt, the fight against illiteracy started in the 1950s when then-President Gamal Abdel-Nasser expanded free public schooling and gradually increased spending on public education. However, the expansion of enrollment has negatively affected the quality of education. In the early 1999, experts at the Carnegie Endowment for International Peace indicates that “Demographic pressures and increasingly strained resources resulted in the physical disrepair of many primary schools, overcrowded classrooms, and poor teacher morale and motivation in the face of low salaries” (Al-Ahram Weekly Online, 2015). This means that the quality of the education is the key success of any educational system.

Education reforms have been one of the priorities of the Egyptian government for many years. However, the primary goal of most of the reforms was based on the numerical expansion of schools. With the beginning of the new millennium, there was a shift in the focus of the reforms to include the quality of educational level. Reasons for the shift included the new
international trends in the field of education, the New Millennium Development Goals which included the concept of inclusive education and other political, economic, and social factors (El-Baradei & Amin, 2010). Despite several educational strategic plans developed by Egyptian decision makers since 2003, the country’s education quality is still facing profound problems and challenges.

Researchers on education in Egypt mentioned that education has deteriorated considerably during the 30 years of former president Hosni Mubarak’s rule, to the point where it now turns out students “with no skills or abilities”. “The Mubarak regime offered good education to the affluent through expensive private and international schools, leaving nearly 96 percent of low-income and middle-income families” prey to substandard education. Those who couldn’t afford private schools or at least private tuition fell into near illiteracy (Al Ahram Weekly, 2015).

The quality of education remains a major challenge which prevents children from developing their skills and contributing to low completion rates. That’s because of the old teaching styles which discourage student’s participation in most of the time and the use of corporal punishment sometimes as well. Based on the Global Competitiveness Report, published by the World Economic Forum, Egypt was ranked 116 of 140 countries for the quality of its primary education, falling behind many Arab, African, Asian and Western nations.

According to the international knowledge assessment test, 53 percent of grade 8 primary school students do not have basic mathematical knowledge and 45 percent do not recognize some basic facts from life and physical sciences. In addition, until 2012, less than 10 percent of schools met national standards for quality education (UNICEF, 2015).

Increasing the access to education, even in the universities which supposed to enhance the capabilities of human capital, was also the main target of most of the reforms in Egypt. According to Ashraf Hatem, Secretary General of the Supreme Council of Universities (a statutory agency responsible for higher education), one of the government’s main education-
related priorities is, “providing access to higher education. We’re in the phase of access rather than the phase of quality at this stage” (sited in Clark’s article, 2013).

There have been many success cases for countries which reach a sustainable economic development through enhancing their educational system by undertaking educational reforms to develop the quality of educational level students are having access to. One of the major successful cases that showed great transformation was the case of South Korea.

In fact, Egypt has been trying to develop its educational system through many reforms for decades, however, there wasn’t any noticeable progress in the quality of education, and in contrast the quality of Egyptian educational system kept deteriorating. Therefore, it is important to understand why this trend is happening in Egypt, especially, and what can be learnt from the experience of a successful country like South Korea which had a beneficial and successful educational reform that developed its human capital in returns.

1.2 Objective of the Research

The objective of this thesis is to show the role of human capital in South Korea’s education and the lessons to be learnt in the case of Egypt. The reason for choosing South Korea to be the focus of this thesis is mainly because of the exceptional rapid improvement of education it has achieved since started in the 1960s, and such improvement in education system was one of the main factors behind its economic development. Education played a key role in South Korea’s transformation from one of the poorest countries in the world to a leading industrial nation by promoting the development of human resources and technological change (Jones, 2013). In fact, “Korea’s social infrastructure, including school facilities, was devastated because of the Korean War, and the GNP per capita was only US$79, however, as of 2000,
Korea’s GDP stood at US$457.4 billion, the twelfth largest in the world” (Kim, 2002:29).

In addition, Egypt and South Korea had many features in common that characterized their economy and political situation at a certain point of history. This period of time extends from the 1950s, as for South Korea it started in the 1950 but extends to 1961-79, the period of South Korea’s economic miracle under the rule of President Park Jung-hee.

1.3 Main Research Questions

The objective of this thesis is to analyze and examine the major educational reform practices and success factors of the reformed educational system adopted by the South Korean government and their relevance to Egypt, with special emphasis on the role of human capital.

Research Questions

1. What are the main featured reform programs and success factors of the South Korean educational system?

2. What are the challenges of the education system in Egypt? Why educational reform efforts in Egypt did not achieve results?

3. What areas can Egypt benefit from the Korean experience in educational reforms?
Chapter 2: Literature Review

2.1 South Korea and Egypt (Reasons for the Selection of South Korea as a Relevant Experience to Egypt)

Although both countries began with land reforms to redirect investment resources from agriculture to industry, received US foreign aid, (though Egypt has received much larger quantities in later years), and most importantly, both have carried out import substitution policies, giving a substantial role to the state in shaping the country’s development, however, the result was different. The results were that South Korea appeared to have a successful state-led industrial development compared to state-led sluggish industrial development in Egypt, all the way from the 1950s to date.

South Korea has become an internationally competitive and highly-diversified economy while Egypt continues to have industries which need protective barriers to survive (El Haddad, 2016:3). South Korea became “a late industrializer whose GDP per capita was less than that of Egypt in the 1950s and now is nearly 4 times as much,” the country “has maintained a spectacular growth record for three decades which was driven by exports, in addition, “throughout the 1960s and 70s Korea has sustained an export growth rate of around 40% which is 4 to 5 times as fast as that of Egypt” (El Haddad, 2016:5). The below figures demonstrates the above facts:

Figure 1: Real PPP GDP per capita Egypt versus South Korea (1953-2004)

*Source: Alan Heston, Robert Summers and Bettina Aten, Penn World Table Version 6.2, Center for International Comparisons of Production, Income and Prices at the University of Pennsylvania, September 2006.*
The 68% GDP growth rate could only be export led since aid from the US has declined from an average of 15% of GNP in 1956-58 to less than 5% 10 years later (Edwards, 1992).

Figure 2: Egypt and South Korea Exports (1953-2004)


The above figures show that due to an impressive manufacturing growth rate of over 17% for over two decades, Korea’s share of manufacturing as a percent of GDP increased from approximately 10% in 1960 to 30% in 2005. In contrast, after Egypt’s manufacturing growth rate has never exceeded 7.2% resulting in manufacturing accounting for a modest share of 17% of GDP in 2005. In fact, such figures were the results of Korean’s government series of five-year economic development plans that was introduced in the beginning of the 60’s and the primary goal of the educational plan was to provide educated manpower to the economy who can work on the success of such plan (Kim, 2002:30).

South Korea at that time has exerted huge national efforts and focused its national energy and resources on improving early childhood education as well as implementing major developments on tertiary education. The focus on education was part of the Korean government five-year economic development plan that was introduced for the development of the country. It
is also worth mentioning that each stage of investment in education boosted South Korea’s economic growth. “The development of primary education following the Korean War supplied the workers for the labor-intensive industries of the 1960s. The expansion of secondary education contributed to the development of capital-intensive industries in the 1970s and 1980s” (Jones, 2013:5). Furthermore, they succeeded in providing universal access to primary and secondary schools which reinforced social mobility and income equality (Koh et al., 2010).

Furthermore, education planning, particularly higher education has been very much linked to alterations in the economic development pattern. At the beginning, the economy has mainly depended on producing primary commodities moving to complete dominance by the manufacturing and services sectors, ending by the knowledge-based economy. In his book “Linking Higher Education and Economic Development”, Pundy Pillay (2010) says that the Korean state plays a leading role in the funding of school, especially the primary education. Besides, the state plays a key planning role in the economy through ensuring that the education system develops in line with the human resources needs.

2.2 Brief Information on the Egyptian Educational System

Based on the National Strategic Plan for Pre-University Education Reform in Egypt, 2007/2008, the pre-university education system in Egypt consists of four levels. The pre-primary level which lasts for 2 years (age group from 4-5 years old), the primary level which lasts 6 years (age group from 6-11 years), the preparatory level which lasts 3 years (12-14 years old), and the general Secondary level which lasts 3 years (15-17 years old). However, pre-school education is not considered as part of the formal education system yet. While the university education lasts for 4 years (18-22 years old).

Education is compulsory from Grade 1 to Grade 9. The system is composed of six years of primary school, three years of secondary school, and three years of senior secondary school.
Students can be entitled to a “Basic Education Certificate” after successful completion of nine years of schooling, a “General Secondary Education Certificate” or “Technical Secondary Education Diploma” after 12 years of schooling, and for students who follow a five-year program of technical secondary education (two years postsecondary), a “Technical Secondary Education Diploma”.

The academic year in Egypt extend from October to June, and the education system is administrated by three main ministries, the Ministry of Education which is responsible for supervising pre-school, primary, preparatory and secondary education, the Ministry of Higher Education which is responsible for the post-secondary education. Al-Azhar education is under the authority of the Ministry of Al-Azhar Affairs. All these institutes are supervised through the Supreme Council of Universities which sets the overall policy and supervises the establishment of new institutions.

The school-age population by education level shows the domination of the primary level over any other level of education. The number is also being decreased over the more developed levels of education.

<table>
<thead>
<tr>
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<tr>
<td>Tertiary (university)</td>
<td>7,918,929</td>
</tr>
</tbody>
</table>


Egypt has made significant progress towards achieving Education for All and the Millennium Development Goals, particularly in expanding access to basic education and closing the gap between boys’ and girls’ enrolment. For the school year 2014/15, the net enrolment rate was 91 percent in primary education, and 84 percent in preparatory school (Ministry of Education, Statistical Yearbook 2014-2015).
The below table shows the total progress and completion ratio of education and ratio based on gender mainly in the primary level since it represents the highest level of enrollment rate with the highest number of enrolled students.

<table>
<thead>
<tr>
<th>Indicators</th>
<th>Figures</th>
</tr>
</thead>
<tbody>
<tr>
<td>Net enrolment in pre-primary</td>
<td>24%</td>
</tr>
<tr>
<td>Net enrolment rate in primary education</td>
<td>91%</td>
</tr>
<tr>
<td>proportion of pupils starting grade 1 who reach last grade of</td>
<td>Total :82 %</td>
</tr>
<tr>
<td></td>
<td>Boys :78.7 %</td>
</tr>
<tr>
<td></td>
<td>Girls: 84.7 %</td>
</tr>
<tr>
<td>Children aged 6–10 who are out of school</td>
<td>Total: 82 %</td>
</tr>
<tr>
<td></td>
<td>Boys: 153,370</td>
</tr>
<tr>
<td></td>
<td>Girls: 165,757</td>
</tr>
</tbody>
</table>

*Source: UNICEF Official Website.

2.3 The General Problems (Challenges) of the Egyptian Educational System

Education in Egypt has been and is still considered as a problematic issue that requires a firmly stance.

The problem begins and expands with the introduction of the concept of “free and equal access to education”, especially at the primary and secondary levels of education. In fact, this issue was mentioned thoroughly in all the constitution, starting from 1957 to the 1971 constitution. According to the 1971 constitution of Egypt, education is a right that fulfills the two basic principles of equity and equal opportunities. Articles 18, 20 and 21 state that education as a basic right, that the state is responsible for and supervises education to ensure equity, that basic education is compulsory (primary and preparatory), that education in the institutions of the state is free in all its different stages, and that literacy is a national responsibility (Baradei,
Later on, basic education was extended to include preparatory education by virtue of Law number 139 for 1981, and although the primary stage was reduced to eight years in 1988, Law number 23 for 1999 stipulated that the duration of compulsory education is nine years, through returning year six to primary education (Baradei, 2004:13). The purpose of this concept was designed to achieve equal opportunities for the people in Egypt. In addition, it aims to facilitate the admission to university education according to the total results of students in the general secondary examination. This was followed by the expansion of university education and its spread throughout the country.

The problems in the Egyptian educational system can be summarized as follows:

2.3.1 Financial Problems

The poor performance of the Egyptian Educational system can be attributed to several reasons some of them are related to inherited problems from past years, while others are related to current existing inefficiencies and among them are the following:

2.3.1.1 Shortage of Financial Resource

Despite the benefit of remarkable resources during the nineties, however these resources were not enough to cover the effects of the past deterioration in the Egyptian educational system especially starting with the mid-seventies to the end of the eighties. The below figure shows the evolution of real average public spending per-student in pre-university education:
2.3.1.2 Inefficiency of Resource Utilization and Allocation

There is a waste of resources in school construction and designing, for instance school designs have cost about 20% more than the efficient cost of construction and space utilization based on the World Bank (1996) report during the 90’s. In addition, it seems that there is an overstaffing of teachers, however, in Egypt the student-teacher ratio may be misleading since a significant number of teachers may be involved in administrative activities. In fact, “the average number of students per teacher at the primary, preparatory, and secondary levels were 24, 20 and 13 respectively in 1997” (Baradei, 2004:13). On the other hand, international standards indicate that student/teacher ratios are about 25-30 for primary and secondary levels would be sufficient for ensuring the delivery of good quality education services. In case of Egypt, the non– teaching staff rates are high compared to the OECD countries (0.78:1 as compared to 0.58).

2.3.2 Quality Problems

The Egyptian educational sector main problem is mainly in its ineffectiveness, or poor quality, which adversely affected the retention capability of the education system
on one hand, and both the private costs of education (including the opportunity cost) and its rate of return, on the other hand (loveluck, 2012:3)

2.3.2.1 The Poor Educational Infrastructure (Buildings)

In facts, the educational buildings were one of the main weaknesses of the educational system in Egypt. Investment in school facilities has not kept pace with the rapid increase in the numbers of students, resulting from high rates of population growth and rising enrolment rates. Overcrowding – with classes regularly containing between forty and fifty children – and poor facilities do not create an environment conducive to learning. To alleviate the pressures caused by both these factors, many schools operate in shifts, with most students only attending for part of the day (Loveluck, 2012:6).

Furthermore, larger buildings may require more sophisticated methods of construction and this will increase the unit cost of provision. The optimum school size in sparsely populated rural areas is therefore likely to be quite small at the primary level (Lewin, 1987). This was a crucial problem since one of the major problems of Egypt is the presence of insufficient financial resources.

2.3.2.2 High Density of Classrooms

With the presence of insufficient schools, in terms of numbers and quality, and the implications of the demographic situation and the population explosion crisis which has resulted in a massive increase in the number of students at the age of basic education, this caused the increase in the classrooms density above the absorbed power at high rates which reached in some cases to about one hundred students. While the average number of pupils per class at the primary level decreased from 44 in 1990, to 42 in 2000, the average number of pupils per class at the preparatory levels increased during the same period from 43 to 44 students (PARC, 2002). Though a targeted average of 40 students per class may be considered acceptable, in reality this average conceals great variations from very small classes to very crowded classes of 50 to 70
students in the more densely populated areas (UNESCO, 2003). Furthermore, multiple educational periods that reached up to four periods/shifts of study in some areas on a daily base was added, which caused students at some school to stay for only two to three hours a day.

2.3.2.3 Unqualified Teachers

The OECD (2005) sees teacher quality as the most important determinant of student learning that is under the direct control of policy makers. For example, in 1998 out of the 25,000 teachers hired, 13,000 had no pedagogical training (World Bank, 2002b). In fact, the effect of the presence of unqualified teachers is a major problem serious in any educational system due to the direct and negative effects they leave on students. They usually generate unqualified students who are incapable to develop their educational process in universities. Feiman-Nemser (2001) mentions that “what students learn, is directly related to what and how teachers teach; and how teachers teach depends on the knowledge, skills, and commitments they bring to their practice...”(p. 1013). She confirms that it, has direct implications for initial and ongoing teacher education as she states “if we want good schools to produce more powerful learning on the part of students, we have to offer more powerful learning opportunities to teachers [in their training]” (p. 1023). In addition, Egyptian teachers have seen their income being eroded by rising inflation, making it difficult for them to satisfy their basic needs with only the income received from public schools. Teachers have found after-school classes to be an easy and lucrative way to supplement their income, and therefore encourage students to participate by sometimes even relying on drastic means (Ille, 2015:1).

Dependence on Private Lessons

As a consequence of the weakness of the educational system and the absence of schools’ role, most of the families that could afford paying for private lessons or tutoring preferred to let their students go for private lessons or tutoring beside school attendance. The appearance of the private lessons was not a general phenomenon only at that time, however it spreads in the society
like a killing diseases. This phenomenon has increased after the October War of 1973 because of the migration to Gulf countries. At that time, teachers were suffering from very low wages, and they had in turn to search for other sources of income outside of their schools, and this has coincided with the phenomenon of the low level of education in the public schools, forcing many parents to look for alternatives outside the school. This phenomenon spread through years and became the most crucial problem that is facing the educational system in Egypt. In a recent study, it was observed that the most important educational expenditure item for both poor and non-poor households in 1999 to 2000 was private tutoring. It was found that “nearly 50% of students rely on private tutoring besides the regular school lessons. Private tutoring is not only enforced by teachers, it is a systemic problem. Our data reveals private tutoring to be a practice that is encouraged by the underlying administrative system, the lack of checks and balances, and the broad acceptance of parents of this practice coupled with their high level of illiteracy.

The reasons behind additional private tutoring are low teaching quality, a dense and difficult curriculum, and overcrowded classrooms. Private lessons are also frequently forced on students through teachers threatening to jeopardize pupils' promotion to higher grades. (Ille, 2015:1).

2.3.2.5 Textbooks and Curricula

Nothing is done to make the schoolbook attractive. For the primary grades, the lessons are difficult to comprehend. Students are asked to memories long poems. We do not push neither for progress in spelling through dictation, for understanding basic ideas of a text nor encouraging students to read between the lines. Indeed, official curriculum textbooks lost their value; they are cheaply printed on poor quality paper with monotonous print and few illustrations that lack exercises, in addition, of course, to errors in translation and spelling in Science’s and Math’s books for students of language schools that teach these subjects in either English or French. In addition, the course design and its textbook do not take into account in-class time constraints and overcrowded classrooms. The Arabic language book for the first year prep (high school) students
sometimes only mentions a title for the lesson and students are expected to discuss this with the teacher. (Bakr, 2013:1).

2.3 Pre-Universities Educational Policies in Egypt

It is important to analyze the educational policies during the history of Egypt to comprehend the above mentioned problems in more details. Thus, the below section will give a brief information about the educational policies in Egypt, mainly, from the 50’s till the 70’s which is the same period in which South Korea has started its educational reform. However, in case of Egypt, there was no clear reform agenda that was adopted; Egypt only indented major policies to work with during this period.

2.3.3 In the Fifties and the Sixties

The educational policies that Egypt has adopted in the fifties and the sixties were based on a number of concepts mainly:

2.3.3.1 Educational Budget Expansion

The development of the MoE’s budget has shown a massive increase from 27 million in the 50’s to 96 million during the 60’s (Embaby and Nadia, 2015:87) and the below table shows the exact development in the budget during this period:

<table>
<thead>
<tr>
<th>Year</th>
<th>Budget</th>
</tr>
</thead>
<tbody>
<tr>
<td>51/52</td>
<td>27,000,000</td>
</tr>
<tr>
<td>61/62</td>
<td>75,000,000</td>
</tr>
<tr>
<td>67/68</td>
<td>89,397,000</td>
</tr>
<tr>
<td>68/69</td>
<td>96,705,700</td>
</tr>
</tbody>
</table>

*Source: Situated in (Embaby and Nadia, 2015:88).  
Remark: Mentioned amounts are in EGP/Millions

Figure 5: The Exact Development in the Budget during the 50’s & 60’s
The above table and figures show the massive increase in the Ministry’s budget between the 50’s and 60’s which account for 178%. However, it has increased on a decreasing rate in the following years. This was shown between the educational years 61/62 and 67/68 in which the budget has only increased by 19% (through 7 years). The rate has increased in one educational year, between 67/68 and 68/69 to 8% in only one year. The changes in the budget with such rates show that there were no clear criteria for the increase in budget through years. During this period, it was linked to the socialist regime at this period and the concept of free-access to education at that time. The increase in the number of students interested to be enrolled put a higher burden on the government’s budget to cover their expenses.

2.3.3.2 Expansion of Schools

This was done through increasing the number of schools to absorb the increasing number of students due to the increasing rate of the population during this period. This expansion also occurred because the 1952’s revolution concepts which demonstrated that the concept of free-of-charge access to education in all levels to all people despite their social levels.

It was stated in the 1956 constitution, that the State shall provide free education in the various stages in the State's educational institutions according to the Law (Article no. 49) and that education in its primary stage is obligatory and free to all citizens (Article no. 50). Therefore, students’ enrollment has increased massively after the 1952 and reached six million in the 70’s compared to two million at the early years of the 50’s in compression to an increase in the population rate by 70% during the mentioned period because of such new policy (Embaby and Nadia, 2015:112).
Thus, the following table shows the development in the number of schools and students and the percentage change in all the educational levels from 1950 to the educational year 1970/1971:

<table>
<thead>
<tr>
<th>Year</th>
<th>No. of Schools</th>
<th>Total No. of Students</th>
<th>% Change Every 10 Years</th>
<th>Annual % Change</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td>Schools</td>
<td>Students</td>
</tr>
<tr>
<td>50/51</td>
<td>1,605</td>
<td>539,727</td>
<td>442.7</td>
<td>483.9</td>
</tr>
<tr>
<td>60/61</td>
<td>8,711</td>
<td>315,462</td>
<td>27.4</td>
<td>58.6</td>
</tr>
<tr>
<td>70/71</td>
<td>11,101</td>
<td>4,999,058</td>
<td>37.7</td>
<td>41.2</td>
</tr>
</tbody>
</table>

*Source: CAPMAS Online Data, situated also in Embaby and Nadia, 2015:112.

Figure 6: No. of Students from the 50’s to the 60’s

The above table and figures confirm the fact that even with the expansion of schools, the number was not sufficient due to the expansion of population and this was one of the reasons that caused the over density of classes. Based on the opinion of an Educational Policies Expert in the Ministry of Education in Egypt the expansion was not sufficient because the increase in population such expansion with the increase in number of enrollment yearly compared to before the 50’s. In addition, the policy mainly depends on the numerical expansion disregarding the quality of education to be given to students in such schools. It was the role of the State to ensure that all citizens shall have access to free education through allocating a percentage of government spending to education which should gradually increase to comply with international standards.
2.3.3.3 Equal Opportunities to all Citizens

This was done through giving the chance to female students to compete with male students and have the right to enroll in all the educational levels. During the year 1962/63, the number of enrolled female students has obviously increased; for instance, the number of enrolled students in the primary level has increased by 7.7% compared to the previous educational year 1961/62, technical education enrollment has increased by 8.7%, preparatory technical enrollment has increased by 59.4%, secondary enrollment has increased by 71%, and technical secondary enrollment has increased by 58.2% (Embaby and Nadia, 2015:113). The increase in the enrollment of female students was also related to the increase of number of schools. With the beginning of the 70's, the investment expansion policies and the encouragement of the private Egyptian, Arab, and foreign investment has encouraged the investment in private education system in the pre-universities level under the slogan of having a better education for the development of new social standard of the Egyptian Society.

It is obvious from the above parameters that the main concern from the implemented educational reform at that time was the numerical expansion to educate as much children and students as possible. This is due to the importance of human resources as a prime factor in the success of educational reforms, among all other factors. Thus, it was reflected in the attention and public spending that the government has given to this factor in Egypt.

2.4 Recent Attempts for Developing the Educational System in Egypt

The basis of an early educational reform program could be considered by the era of Dr. Hussein Kamal Baha Elddin, the Minister of Education for the longest period in the history of Egypt from May 21, 1991 until July 9, 2004. He built the Ministry’s policy on a number of pillars,
and issued a document that includes educational policies and methods of implementation that were presented to the Shura Council on March 2, 1992.

Furthermore, in February 2003, the Ministry of Education introduced the “Programs of the National Plan for Education for All and their Costs”. The following table shows each kind of program with the allocated budget for each program at that time:

<table>
<thead>
<tr>
<th>Sector</th>
<th>No. of Programs</th>
<th>Cost in Billion (L.E.)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Early Childhood and Pre-School Education</td>
<td>4</td>
<td>8.5</td>
</tr>
<tr>
<td>Formal Basic Education</td>
<td>6</td>
<td>103.5</td>
</tr>
<tr>
<td>Out-of-School Children And Young People</td>
<td>6</td>
<td>2.8</td>
</tr>
<tr>
<td>Adults below reading Levels</td>
<td>7</td>
<td>2.5</td>
</tr>
<tr>
<td>Follow-up and Plan Evaluation</td>
<td>1</td>
<td>0.1</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>24</strong></td>
<td><strong>117.4 = 6.5 $</strong></td>
</tr>
</tbody>
</table>


Despite such reforms, there were some financial problems that faced the educational system through years and have expanded even more in the years of the reform with a decline in the total government expenditure on education

*Source: Data World Bank Official Website.*
2.5 The Importance of Investing in Education

Research literature emphasizes the significance of investing in education (Schweke, 2004). Investment in education has a strong impact on economic growth in general despite the different education levels that should be invested in. Some evidence indicates that economic development and growth is significantly influenced by primary and secondary education while others believe that high school education is the most important level of school education. In his study, Panagiotis Parkas (2014) shows the various opinions of the literature on this matter.

In Taiwan, it was found that primary and secondary education add “explanatory” power to economic growth, unlike high education which has no noteworthy effect on economic growth (Liu and Armer, 1993). Another study conducted by Tallman and Wang (1994) on Taiwan shows the opposite result and indicated the importance of higher education over primary and secondary education in enhancing economic growth. In 1998, McMahon carried on a study on a sample of some Asian countries and found that there is a positive relation between primary and secondary levels and economic growth. In some cases, the effect of education depends on the level of development of the country, for instance, Petrakis and Stamatakis (2002) discovered that low-income countries benefit from primary and secondary education while high-income developed countries benefit from higher education.

2.6 Educational Reforms & Economic Development

Literature on microeconomic returns to education indicates that “the majority of the macroeconomic literature on economic returns to education employs the quantitative measure of years of schooling, now averaged across the labor force. Using average years of schooling as an education measure implicitly assumes that a year of schooling delivers the same increase in knowledge and skills regardless of the education system” (Hanushek and Ludger, 2007:4). Furthermore, there is a clear association between growth rates and school attainment as explained by many scholars. Hanushek and Ludger suggest that each year of schooling (over
cross countries\(^1\) boosts long-run growth by 0.58 percentage points as explained by the below figure:

**Figure 8: Year of Schooling (over cross countries)**

![Figure 8: Year of Schooling (over cross countries)](image)

*Source: Hanushek and Ludger, 2007:4.*

Another important aspect about schooling is the quality of education that students have access to. Attention should be given to the quality of education students have access to, since ignoring such differences can significantly destroy the relevant relation between education and economic growth. In addition, the quality measure helps to determine the differences between two main important factors which are educational level and individual’s attained skills earned during the educational process. Such difference is important in underlying the interpersonal distribution of income within societies based on the two factors. Understanding such relation identifies clearly the relation between quality of education and economic growth. That’s because, “there is credible evidence that educational quality has a strong causal impact on individual earnings and economic growth” (Hanushek and Ludger, 2007:1).

Increased investment in information and knowledge provides future profits and labor productivity which in turn flourishes the economy. In fact, high quality education enhances labor productivity and reduces the possibility of social problems that would, in turn, have a negative

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\(^1\) “The standard method of estimating the effect of education on economic growth is to estimate cross-country growth regressions where average annual growth in gross domestic product (GDP) per capita over several decades is expressed as a function of measures of schooling and a set of other variables deemed important for economic growth” (Hanushek and Ludger, 2007:4).
impact on economic development (Bils and Klenow, 2000). A large number of countries are improving and reforming their education systems in order to provide their citizens with the required skills and knowledge that would help them connect actively in dynamic knowledge based economies and democratic societies (OECD, 2000; Riley, 2004). In order to achieve this, citizens should be literate and have enough skills and knowledge in information and communication technologies (ICTs).

The most common mechanism for increasing economic competitiveness is to equip people with the skills and information needed for the success in an increasingly knowledge-based economy (Hargreaves, 2003). It is known that, “an economy is competitive if its population can enjoy high and rising standards of living and high employment on a sustainable basis. More precisely, the level of economic activity should not cause an unsustainable external balance of the economy nor should it compromise the welfare of future generations” (European Competitiveness Report, 2000: 23). In relation, “education for the knowledge based economy has become a buzz phrase in education policy discourse throughout the developed world and the transition economies but also increasingly in developing countries” (Sreenivasulu, 2013: 32).

Knowledge based economy give great emphasis to mathematics and science, information and communication technologies, basic knowledge and skills for the development of interpersonal skills. These are the main policies and strategies that address the relationship between economic growth and educational reform. The requirements of different knowledge and skills form both employees and managers are needed now more than ever for the success of any work environment. Successful economies basically depend on strategic alliances rather than raw competition for markets and clients (Reich, 2001). Moreover, the countries that are concerned about their sustainable economic development are keen to improve social skills and habits of
mind, whether at work or school, that are necessary for productive group processes (Hargreaves, 2003).

The development of knowledge-based economies and network societies seems to be a powerful explanation for educational reforms that took place in many developed countries (Sahlberg, 2004). Schools and teachers are expected to present more than they used to before. Meanwhile, education has been influenced by globalization which requires teachers to produce more and in a different way in order to contribute to the development growth of their countries. According to Hargreaves and Goodson (2006), this can be achieved through the implementation of three actions. First, and as a start, educational reforms should provide a strong combination of educational change knowledge to the personnel involved in planning and implementing this process. Second, the focus should not only be on the structure and content of education, but rather on the moral purpose as well as the processes of learning and teaching. Third, the sustainability and extension of educational reform can be guaranteed by analyzing the efforts of the change in a wider range of setting over a longer period of time (Hargreaves and Goodson, 2006).

Economic development is a broad concept that has a wide number of definitions depending on how it is perceived, i.e. on the local or the global perspectives. In addition, the definition of economic development depends on the objective of the process. On one hand, and according to the International Economic Development Council (IEDC), economic development is defined as “creation of jobs and wealth, and the improvement of quality of life or as a process that influences growth and restructuring of an economy to enhance the economic well-being of a community”. The well-being of a community is a reflection of what individual’s earn, in other words, individual’s standard of living, and it was found that “educational quality, measured by what people know, has powerful effects on individual earnings, on the distribution of income,
and on economic growth” (Hanushek and Ludger, 2007:2). In fact, education can increase the human capital in the labor force, which increases labor productivity and thus leads to a higher equilibrium level of output (Mankiw, Romer, and Weil, 1992). According to the European Competitiveness Report (2000), education is an important input that helps to upgrade quality and competitiveness of the country and it is considered as a major political accelerator that can enhance the economy. Thus, the below figure shows such relation:

**Figure 9: Inputs & Outputs of Education Reforms**

Thus, on achieving economic development, there is no single strategy, plan, or criteria that countries should abide by. Economic development is rather a long term process that depends on various factors, some of which are local factors as geographic, political and social factors.

There have been various studies on the relation between educational reforms and economic development. Some of which indicate a strong and direct relation between the two indicators and others prove the opposite. Many believe that targeted educational reforms are necessary to increase labor productivity and promote economic development. This school of
thought is based on the assumption that to increase economic competitiveness, citizens should acquire the needed knowledge and skills that are required by knowledge-based economy. In contrast, there is another school of thought that indicates that educational reforms cannot be a long-run indicator for economic development. This school argues that educational structure is the key determinant for the development process, and that is why educational reforms sometimes negatively affect the process of development. Thus, the below section provides a brief on the literature reference to each school of thought.

2.7 Educational Reforms, Economic Development, and Their Interrelation in South Korea

2.7.1 Education Policies and Reforms in South Korea

There are two distinctive features of the Korean education which are the egalitarian ideal and the zeal for education (Kim, 2002:30). Through egalitarianism, all students should have access to education regardless of their social, economic, or geographical status. The zeal for education indicates that passion for education due to its importance to all Koreans that was embedded in their minds since the colonization of the Japanese to the country in the past. In addition, the Korean’s government introduced economic development plan that was dependent to a great level on education. Therefore, the country has designed its educational policies for the expansion of educational opportunities through the following steps:

2.7.1.1 Setting Priorities for Education

The 1960s through the mid-1970s. In 1962 the Korean government introduced a series of five-year economic development plans. The first two five-year plans (1962–1971) emphasized the growth of labor-intensive export industries, such as light manufacturing industry and consumer goods industry, thus, the main goal of the educational plan was to provide educated manpower to the economy (Kim, 2002:30). At that time, the Korean curriculum stressed on the practicality of education, anticommunism, and moral development. In addition, numerical
expansion through increasing the number of classes was adopted to cover all eligible children, especially, for basic education.

**The mid-1970s through the 1980s.** During this period the government started to recognize the importance of education and other social policies in national development. The fourth five-year plan (1977–1981) included education, public health, and housing as important national policy agenda. The fifth five-year economic plan (1982–1986) emphasized on a harmonious development between the economy and society. As a result, the major goal of the educational reform in 1980 was to ameliorate social ills associated with severe competition for college entrance, in addition, the reform attempted to reduce private tutoring, which entailed an inordinate financial burden to parents, also school curriculum reflected this change and focused on the integration of subjects (e.g., integration of history and geography into social studies at the elementary school level) and development of the whole person (Kim, 2002:30).

Later and after the fifth economic and social development plan (1982–1986), the “Korean government stopped to initiate long-term macroeconomic plans, and for the education sector, this meant a shift of focus from expansion and a quantitative emphasis on manpower supply to quality, relevance, and excellence of education being provided. The corresponding change in the school curriculum can be best described as a learner centered curriculum, where individual difference is respected” (Kim, 2002:31). Therefore, the below table provides a summery on the policy emphases for economy and education during each period since the start of the reform till the present:

| Period         | Economy                                                                 | Education                                                      |
|----------------|-------------------------------------------------------------------------|                                                               |
2. Selective strategic industries in 1970s: export-acceleration, heavy and chemical industries | 1. Expansion/upgrading of primary and lower secondary education  
2. Emphasis on TVET( late 1960s) manpower planning |
Mid-1970s-1980s
1. Structural adjustments from late 1970s: steel, shipbuilding, etc.
2. From imitation to innovation 1980s electronic industry

1990s through the present
1. Enhancing national competitiveness in early 1990s
2. Knowledge-based economy from mid-1990s


### 2.7.1.2 Development of the Policies Through Time

KOTRA’s Director mentioned that each period of time in the Korean history required the development of the educational policy to meet the demand of that period. For instance, as Korea moves on from low to mid technology manufacturing country producing goods for mass markets in the late 1960s, there was a need to supply skilled workers who were willing to work many hours on factory floors. However, this was a new challenge for government to develop the educational system to meet the market’s demand, and this was met by strengthening the secondary education, vocational training, and on-the-job training. In strong need of high-quality, well-educated labor, the government brought the concept of ‘Human Resource’ into its education policy at that time, under the theme of ‘development of the effective and functional human resource out of education policy’ (Jangzip, 1985:184.).

Rapid and sustained economic growth in South Korea has undoubtedly resulted from the recent educational investment implemented by the government in the 60’s. Increasing the value-added of output was always the focus of the development strategies for achieving sustained productivity growth. In order to implement this, well-educated personnel were needed. In the 1960s, the government started promoting import and export substitution industries. This was started by basic agriculture such as rice, light manufacturing sectors such as textiles and bicycles as well as labor intensive industries. During this period, investment in primary education facilitated a gradual change toward more sophisticated goods. Use of technology gained through
foreign licensing was a key tool for this change. Moreover, in the 1970s, the government carried out a well-developed industrial policy that succeeded in shifting to the development of heavy industries such as chemicals and shipbuilding.

Another development strategy that was adopted by the Korean government in line with educational investment was enacting some policies that would help improve technological capabilities and developing the ability to have good quality of technical and vocational training. There was also a continued development of research and development capabilities in the industrial sector that depended mainly on the skilled personnel who resulted from the government’s expansion of the higher education system.

2.7.2 Contribution to Economic Development

Education has contributed to economic development in different ways. First, “education has made it possible for Korea to have a steady stream of labor when the country first launched an economic development process in the early 1960s, its work force was practically the only resource it had” (Lee, 2001:16). In fact, each phase of investment in education fueled economic growth. For instance, the development of primary education following the Korean War supplied the workers for the labor-intensive industries of the 1960s. On the other hand, the expansion of secondary education contributed to the development of capital-intensive industries in the 1970s and 1980s. In addition to the impact on output growth, the emphasis on providing universal access to primary and secondary schools promoted social mobility and income equality.

Finally, the focus shifted to expanding tertiary education in the 1990s, laying the foundation for Korea’s success in IT and the growth of a knowledge-based economy (Jones, 2013:5). In other words, the timing and sequence of policy choices were main reason behind the success of the reform in pushing the education boundary from the lower to the upper part of the system. As explained, the “policy emphasis was shifted from primary education in the 1960s, to secondary
in 1970s, and then to tertiary in the 1980s, and vocational education was not as emphasized as general education until the skill level of the workforce increased (Kim, 2002:39).

Pyo (1995) based on an empirical finding estimation indicated that human capital accumulation has been as important as physical capital accumulation in explaining economic growth. This finding confirms the hypothesis that rapid accumulation in human capital has been instrumental in the overall economic growth process of Korea.

In his evaluation of the performance of the educational reform that started in the beginning of the 60’s, Gwang-Jo Kim mentioned that:

‘’The educational expansion policies have significantly improved the quantitative measures of educational outcomes. There was no shortage of skilled labor, and quantity and quality trade-off was not severe. The average years of schooling have almost doubled between 1970 and 1995 from 5.74 years to 10.25 years. The illiteracy rate has decreased dramatically from 13 percent in 1970 to 2 percent in 1999. Access to educational opportunities is almost universal at the primary and secondary level. There is no discernible difference in both school attendance and academic achievement between boys and girls. The expansion process has been equitable as evidenced by school equalization policies’’ (Kim, 2002: 36).
Chapter 3: Conceptual Framework

3.1 Relation between Education and Economic Development

To determine the relation between education and economic development, it is crucial at first to have a clear definition for education. In fact, there are two ways to define education, “education can be viewed as both a consumer good and a capital good because it offers utility to its consumer and also serves as an input into the production of other goods and services” (Zivengwa, 2013: 399). Scholars who argue that education is a capital good believe that education can be used to develop the human resources necessary for economic and social transformation, as a result leading to economic growth. Zivengwa (2013) believes that the focus on education as a capital good relates to the concept of human capital in a way where the development of skills is an important factor in production activities.

Scholars also believe that growth and human capital development are mutually supporting each other. Growth promotes human capital development, and human development promotes growth (Jaoul, 2004). Moreover, “it has been found that well educated human capital has consistent and strongest direct and positive effect on productivity, prosperity, development and economic growth of a country” (Shah, 2011: xvi). Furthermore, Selim (2006) mentioned that there is a virtuous cycle of links between economic growth, human capital and physical capital.
Scholars who support the relation between education and growth are numerous. Lucas (1988) mentions that the growth rate of human capital is critical for economic growth and that growth depends mainly on the amount of time allocated by individuals to acquire skills. Romer (1990) assumes that the creation of new ideas is a direct function of human capital, and that investment in human capital leads to growth in physical capital which in turn leads to economic growth. Gupta and Chakraborty (2004) develop an endogenous growth model of a dual economy where human capital accumulation is the source of economic growth. They argued that the duality between the rich individuals exists in the mechanism of human capital accumulation.

Kui (2006) concluded that economic growth was the cause of higher education in China. Chaudhary, Iqbal and Gillani (2009) analyze the relationship between higher education and economic growth for Pakistan and demonstrate that there was unidirectional causality running from economic growth to higher education.

In addition, education impacts both the social and economic conditions of citizens which in result positively affect the economic development of countries. Romer (1990) believes that
education provides strong citizens to any country who are less likely to engage in crimes thus enhancing the welfare of country and citizens.

Lucas (1988) indicates that education creates major structural changes in children capabilities through the use of technology which develop human capital and as a result countries develop more. Schultz (1971) states that educated human capital encourage and understand the use and importance of technology which make people more productive and dynamic to the threats and opportunities which enables them to walk in the world.

3.1.1 Supportive Views of Educational Reforms

Large part of the literature endorses the importance of investing in education to achieve economic development. Schweke (2004) shows that primary and secondary education has contributed significantly to the economic development and growth in South Korea. Bils and Klenow (2000), Cohen and Soto (2001), Hanushek and Kimko (2000), Krueger and Lindahl (2000) all of them confirm that “increased investment in knowledge, skills and health provides future returns to the economy through increases in labor productivity”. OECD (2000) and Riley (2004) indicate that many countries are reforming their educational systems to provide their citizens with the best knowledge and skills that can enable them to participate actively in a dynamic knowledge-based economy.

In his article, “Education Reform or Raising Economic Competitiveness”, Sahlberg (2006) mentions that “market values like productivity, effectiveness, accountability and competitiveness are increasingly being embedded in global education reforms”. He adds that there exist three inspirations for economic educational reform movement globally. The first inspiration is the new paradigm of learning which shifted the reform from teaching to learning; in other words, the structure of the reform. According to this paradigm, the outcomes of schooling stress more on “the conceptual understanding, problem-solving, emotional and multiple intelligences and
interpersonal skills rather than the memorizing of facts or mastering irrelevant skills” (Sahlberg, 2006:6). Schooling is no more just a tool to erase illiteracy, more outcomes are required and results from years of schooling are more important than attending schools. The second inspiration is the public demand to guarantee effective learning for all pupils. The third inspiration is the accountability movement in education that has accompanied the global wave of decentralization of public services. In other words, “making schools and teachers accountable for their work has led to introduction of education standards, indicators and benchmarks for teaching and learning, aligned assessments and testing and prescribed curricula” (Sahlberg, 2006:6). In a nutshell, this movement suggests that there should be more concern on the quality and effectiveness of education rather than just having access to education. He also stresses major factors of economic competitiveness and education reform as described in the below figure:

In addition, Pyo (1995) based on an empirical finding estimation indicated that human capital accumulation has been as important as physical capital accumulation in explaining economic growth. This finding confirms the hypothesis that rapid accumulation in human capital has been instrumental in the overall economic growth process of Korea.
3.1.2 Opposing Views of Educational Reforms

Studies which show the inversely proportional relation between educational reforms and economic development vary. One of which was that of Sanchez and Waters (1974), where they show that school systems, especially in developing countries, hinder the path of economic development in various ways. They argue that educational reforms in developing countries hinder development because they “distort the investment alternatives which are open to people, allow teachers and administrators to appropriate part of the social contribution to education, and generate social conflict, i.e. guarantees from governments to students within the reforms” (Sanchez and Waters, 1974).

3.2 The Theoretical Basis for the Correlation between Human Capital Development finds successful Education Reform

The concept of human capital had a substantial place in the analytical economics. One of the theorists “saw clearly and cogently that all deficient resources that render economic services are forms of capital and that the services from the total stock of capital at a given date are the available income streams” (Schultz, 1987, p.12). The introduction of the theory of human capital represented a new substantial framework for understanding the foundation for investment in education in addition to the profitability of investment in education.

J. Hartog (2000) applied an economist’s marginal analysis to show profitability or non-profitability of investment in education. He supposed that the premium for another year of schooling is not constant, but depends on the total years of schooling. In a lifetime perspective, this benefit should drop, as the remaining working life becomes shorter and shorter (as shown in the below figure).
Human capital might be valued as the cost of all actions taken to increase future welfare. Human capital expressed in education can be considered as a type investment (Didenko, 2007, p.15). Thus, “it ought to be possible to measure its rate of return in a manner analogous to the measurement of rates of return to physical capital. And indeed, the calculation of both private and social rates of return to educational investment for all stages of post-compulsory education in both developed and developing countries, was part and parcel of human investment revolution that swept through economic thought after 1960” (Blaug, 1992, p.69).

Some analysts have specified a production function in which “output depends upon tangible capital and “effective labor”; the latter is a weighted sum of the number of workers". (Nelson & Phelps, 2003, p.158). In fact, the “increases in the quantity of human capital per person tend to lead to higher rates of investment in human and physical capital, and hence, to higher per capita growth” (Barro, 2003, p.94). There is an influence of education on economic
development, where there is a direct relation between schooling and the growth rate of per capita GDP across countries. (Nelson & Phelps, 2003).

To sum up, the qualitative descriptions of human capital come from one of two sources: measures of schooling inputs (such as expenditure or teacher salaries) or direct measures of cognitive skills of individuals. Growth provides increased resources to a nation, and a portion of these resources may be ploughed back into human-capital investments (Didenko, 2007, p.23).

3.3 Methodology

The analysis in this research depends on secondary resources, mainly literature review, and qualitative research interviews which examine the educational reform program in Egypt vis-à-vis South Korea.

The qualitative research technique helps in targeting the relevant information easily and directly from key informants and finding the answers to most of the questions needed concerning the status of the Korean educational system and the use of human capital and its role in the development process. In-depth interviews were used in this research and were an effective method because they gave more detailed and academic answers for the proposed questions. That’s because the qualitative research technique can explore and explain the phenomena under study and through this method the data are collected through interviews can be analyzed and give more insight about the topic (Creswell, 2013).

3.3.1 Data Collection through Literature Review

The literature review in this thesis was able to clearly cover the main topics of the research. The general problems of the educational system in Egypt were identified thoroughly and were found to be indebted in the system for so many years and till present. It also covered the importance of educational reforms for achieving economic growth for countries. A large part of the literature is devoted for the South Korean and its educational reforms as well. In the process
of gathering such information the dependence was mainly on journal articles and major academic websites.

Major resources were studied to identify the importance of education in achieving development for developing countries. The relation between both indictors were examined through several countries, to make sure that such relation is valid and is not limited to the case of South Korea only. For instance, the article “Relationship between School Education and Economic Growth: SAARC Countries” which was written by Hanifi and Arshed (2016) was among the major researches that stressed on this strong relation. They argued that “the activities of getting or acquiring general knowledge, learning process of basic skills such as mathematics, geography and also developing elementary understanding of some other subjects e.g., history, natural sciences, social sciences, art and Arabic, developing reasoning and judgmental mental power, and preparing oneself or others intellectually for mature life” (Hanifi and Arshed, 2016:295). Therefore, the relationship between education and the GDP is positive, showing that education is a significant primary input factor for the growth of an economy.

Another study under the name of “Investigating the Causal Relationship between Education and Economic Growth in Zimbabwe” by Zivengwa (2013) has investigated the causality between education and economic growth in Zimbabwe during the period 1980 to 2008, and indicated the presence of a “uni-directional causality between education and economic growth”… where “rise in human capital boosts the return on physical investment” (Zivengwa, 2013:399). Thus, these researches were studied to ensure that the relation between education and development is an effective policy to be used by countries that seek economic development.

To link such relation with the case of study under investigation, further researches on the case of South Korea were examined. In the article, “Education Policy in the Republic of Korea: Building Block or Stumbling Block?” by Jisoon Lee (2001) studied the importance of education
and its effect on the economic development in South Korea through examining the characteristics of the Korean educational system in details and exploring the potential for further development in the sector due to the presence of some obstacles.

The importance of this paper is that it highlights that despite the remarkable contributions education has made toward economic development; still there is much work to be done for the sustainability of such effective educational system. The article “Education Policies and Reform in South Korea” by Gwang-Jo Kim (2000) was also studied to find more about the exact reforms which were conducted in South Korea and their effect on the development of the country. The significance of this research is its implication about the role of the government in the process of development, “the Korean case shows that the role of effective government should be to provide appropriate structure and resources to support educational institutions, but not to micromanage to hinder creativity and progress” (Kim, 2000:38). In fact, the role of the government was a major recommendation in many articles that showed how crucial it is on the process of the development cycle.

Moreover, examining the educational system in Egypt and its problems is a major aspect of this research to identify the status and causal reasons behind the bas status of the system. Thus, a paper conducted in 2004 was examined as an assessment for the educational system in Egypt. The importance of this research is that it revolves around the 90’s which support the idea that the problems of the Egyptian educational system were and still being a crucial problem throughout history, in addition, it gives a brief on the reform that started to take place in the 90’s which was also supported by the conducted interview with one of the MoE’s experts.

3.3.2 Data Collection through Interviews

As mentioned above, this research is examining the success of the Korean Educational System experience and how can Egypt benefit from it. Therefore, seventeen interviews (one hour was taken per each interview) with experts or knowledgeable figures from both countries were
conducted. The main target of these interviews was to examine the two educational systems from the point of view of these experts in the dilemma of development of both systems. Moreover, the interviews give a brief insight of the main problems faced by each country in their development process and the drawbacks/advantages of each system. The interviews conducted for this research were done with the following figures:

- Educational Policies **Expert** in the Ministry of Education in Egypt due to her great experience in the ministry related to solutions on how the educational problems can be solved and her studies in the field of educational policies creation and implementations.

- Secretary General of the Education Development Fund in the Cabinet to have a more comprehensive picture about the financial obstacles that face the government in trying to develop the educational system in Egypt.

- Head of Education Sector at the Ministry of Education to give us an academic view about the curriculum of the schools and their problems.

- A Math teacher in one of the Egyptian schools to reflect the teachers’ point of view and get to what they are suffering from in reality and how their problems affect the way they teach the students in schools.

- Teacher and training specialist to have more than one opinion from teachers about their problems.

- PhD in Pharmacology from the University of Minnesota – USA - to receive his opinion about the difference between the quality of education received in Egypt (as a graduate from Cairo University) versus the quality of foreign education.
• Head of one of the Schools in Egypt to have a more broad idea about the administrative problems facing that schools are subject to during proving their services both with the ministry, teachers, and students.

• **Director** of the Korean Commercial Office of the Embassy of the Republic of South Korea in Egypt (will be referred to him as KOTRA’s Director throughout the thesis) to give a brief information about the Korean culture toward education.

• Director of the Korean Institution for Curriculum and Evaluation to have an idea about the kind of curriculum the Korean students are having access to and compare it with the Egyptian one.

• Head of the Korean Association of Computer Education since computer since is one of eth main reason that the Korean system depends on during its development process, thus interviewing this figure was important to know the importance of this filed of art and how did Korea benefited from it.

• Professor in Seoul National University & Author to know his opinion about the Korean professors’ problems.

• Professor in Hankuk University of Foreign Studies to know his opinion about the Korean professors’ problems.

• Professor in Yonsei University (has doctor’s degree of Education) to know his opinion about the Korean professors’ problems.

• Member of the National Assembly to get more information about the ways the non-governmental authorities are doing to help in developing the education system in South Korea both in the past and in the future.

• Lee-Another famous lecturer in Korea
• Doctor and Professor in Yonsei University
• Professor in Seoul National University

3.3.3 Ethical Considerations

According to AUC rules as well as the International Review Board (IRB), all data concerning conducting interviews (the concept, methodology, questionnaire, and consent form) was sent to the IRB in order to obtain the approval to be able to start the data collection process. This approval is essential to ensure that data collection is conducted according to the ethical guidelines, which are available in appendix A.

3.3.4 Research Limitations

Obtaining data from the Ministry of Education (MoE) in Egypt was a challenging matter. Conducting an interview with any governmental official at the MoE required many official approvals from both AUC and MOE in order to permit conducting the interview. In addition, the responses of the interviewee were not sufficient to answer the needed questions, and in most of the cases the interviewee mentioned that it is better to refer to the ministry’s website for any additional inquires.
Chapter 4: Data Analysis and Findings

4.1 Challenges of the Egyptian Educational System

As explained by the Educational Policies Expert in the Ministry of Education in Egypt, the educational system problems in Egypt have started since the revolution of July 23, 1952 and this was shown in her study\(^2\) regarding the development of the educational system, and till now we have not managed to overcome such problems. “Since then the educational system in Egypt has passed through several stages, especially, with the expansion of the establishment of schools, and the dissemination of education among the Egyptian society”. The expected result of this expansion was not achieved; in contrast, Egypt had endured a huge bill of losses. Due to the October War in 1973 and the bills of the four wars that Egypt has engaged in during this period of time, Egypt has lost more than two hundred billion dollars as direct losses, and around one billion dollars as indirect losses. The results of what usually happens after the wars of with the predominance of the society values and material, individual selfishness and openness of consumers’ behavior has had disastrous effects on the national economy, which led to a decline in the standard of most of the services clearly, with a distinguish decline in the educational system.

The Ministry’s Expert stated that almost more than half of the schools, during the 70’s and up to the late 90’s, did not fit any of the standards to maintain the limit near to human dignity, where thousands of schools did not have toilets, thousands of schools were not equipped with any windows or doors, and almost most of the schools were missing the presence of laboratories and libraries. She added that this problem is attributed to the fact that most of the schools’ land are based on small tracts of land that are rented and are not designed from the beginning to be educational buildings.

\(^2\)It is an unpublished study that belongs to the Ministry of Education.
Furthermore, the low qualifications of teachers especially at the primary level, until recently, due to the appointment of teachers with less than tertiary education is another major problem that educational system in Egypt is suffering from. She mentioned that another phenomenon that spread in the society and caused the deterioration of the Egyptian educational system was the appearance of privately developed study aid books, and this matter hinders the development of public textbooks.

She believes that, unfortunately, the results of Dr. Baha’s plan were less than that expected and almost did not exceed the 25% of what it should have achieved. Such failure was due to the high level of expectations, the absences of supervision, and over population which continue to grow over such period, mainly the 90’s. She added that the failure of his reform program was due to the inflexibility in the government sector when it comes to the execution of the plan in reality besides the absence of clear measuring criteria for the progress.

According to a Math teacher in one of the Egyptian schools, Egypt suffers from the absence of standards in the educational system. Egypt has more than one educational system, including traditional and languages, international schools as well as government pilot schools, where each of these four sectors apply a different method and methodology of teaching. Thus, this has been reflected in the quality of the educational process in schools, especially the government, in which the quality of education has deteriorated, to the extent of the absence of classrooms in schools and the reliance on private lessons. Activities carried out by students are limited to artistic activities that are far from the scientific framework, which contributes to the formation of the personality and the scientific outcome of the student. This has led to the absence of the role of the original schools in the education of the students and their rehabilitation on how to interact and deal within the community, where education becomes limited to filling students’ brains with materials to pass their exams. Moreover, effective learning through experiments in labs is almost
absent. Activities carried out by students are limited to artistic activities that are far from the scientific framework, which contributes to the formation of the personality and the scientific outcome of the student. It is crucial to change this situation and apply a long term plan. He added that what has been corrupted over fifty years is not expected to be replaced by a minister or two, but it is necessary to develop a plan for the development of education through specialists and begin to implement them. South Korea has developed only after education has been placed at the top of their development plans. Korea begins from scratch until it becomes one of the leading countries in education.

Based on a major Teacher and Training specialist, the main problem of educational system in Egypt is the educational curriculum, which lacks the presence of any level of critical thinking. In addition, what accelerates the level of the problem is how teachers deal with it, for example, in putting their criteria in the formation of the exams, this creates an environment where students and parents are keener on the grades than the adding value they receive from this educational process. In order to address these problems, the curriculum should be reviewed by expertise, and to take the views of the teachers into account in the development of the educational curriculum. Furthermore, it is also important to link the development of the curriculum in line with the requirements of the current and future labor market as much as possible. As for teachers, still there a few number of them who are not educationally qualified. Training courses for reaching must be given to enhance their educational professional level through which they use to teach their students. In addition, there should be measuring criteria for those teachers after training in order to assess how they apply what they have learned.

A “PhD” holder in Pharmacology from the University of Minnesota-USA who is concerned with the Egyptian educational system stressed that the educational problem in Egypt is challenging and complex and every part of it affects other parts in the whole system. Almost all
of the society’s problem are associated by education, so when we try to solve the problem of education, we must look for fundamental solutions affecting more than one side. Therefore, a framework of priorities for action, and a clear strategy should be applied. The problem of education in Egypt is the result of the influence of five factors between each other, which are highlighted in the role of the Ministry of Education's management of the education system, the teacher's composition and the relationship with educational curriculum, community, citizenship, the concept of free education, and the relationship of education to society. The ministry is working with a centralized system where it takes over all the burden of strategic responsibility of the educational system in the country. For instance, the ministry is responsible for the development of the curriculum and books. In addition, the ministry takes over the executive responsibility of appointing teachers and administrators. The ministry is also responsible for the evaluation and examination process of students. This means that the ministry’s role is not a matter of centralization, but rather a combination of power and authority, where it acts as the prosecutor, lawyer and judge at the same time.

As a result, the ministry wastes its efforts in the executive responsibility, which negatively affects the strategic and evaluation responsibility. This led to a flaw in the system as a whole because of its inability to carry out the three responsibilities of "strategic, evaluation and executive”. The ministry usually applies and follows the easiest method in education which is the old strategy of education that has been used by the whole world in the past. The old method depends on a way to raise one model of citizens away from being innovate and creative, think and imagine, and are not ready to solve problems in the labor market or collective work. This system helps in accelerating the phenomena of private lessons. One of the major problems in my opinion also is the free education from the primary stage to the university and making it available to all without criteria of differentiation on the basis of which led to the absence of technical
education. This results in the accumulation in the number of students beyond the needs of universities, which affected the quality of university education. The establishment of private universities becomes a source of investment project, unlike non-profit universities abroad. For example, South Korea, which is a rich country nowadays, has the best education in the world and has provided free education for the preparatory stage.

According to Schools Heads in a major school in Egypt, most of the educational problems are due to lack of resources which can enable the country to improve the quality of education and train teachers under an integrated vision and strategy. Unfortunately, the curriculum and teaching methods in Egypt are currently not up to the requirements of the 21st century. New methods should be applied in the system and where we can benefit from the experiences of other countries like, South Korea since it was one of the developing countries that reach a great step toward enhancing their education. There is also a need to encourage the civil society and the private sector to participate in the educational process through a national call to build and develop schools.

It is worth mentioning that almost all the problems at the end are affecting the quality of education students have access to. These problems affect the way students are receiving their educational materials, how they absorb them, and how they feel toward processing in their education levels. In fact all the challenges and negative conditions that surround the educational system affect the proper investing in human resources who are the fundamental base of the educational system. Focusing on investing in human capital can significantly improve the quality of education, particularly in its service to economic development. Thus, all the other problems should be tackled in a way not to negatively affect the human capital.
4.2 Korean’s Attitude toward Education

KOTRA’s Director mentioned that, in general, Koreans are obsessed with the idea of educating their children and giving them the highest level of possible education. The process of enhancing children’s education begins at an early stage in advance to a child is born, where pregnant mothers routinely subject themselves to classical music and English for the unborn baby’s education. Throughout years and different eras, whether in the earlier years of educational reform; i.e. 1960’s and 70’s, and later in the 1980’s and 90’s, the Korean attitude toward education was similar and parents were always keen to prepare their children to the school and later to the market competition.

“When a child is three or four years old, he or she begins the long and painful race to a university. His/her parents enroll in preschool programs, which blend into one or two years of kindergarten. After finishing kindergarten, she enters an elementary school, where the race toward a university becomes earnest and serious. As He/she advances in grades, her life is influenced progressively more by peer competition. Toward the latter years in elementary school, she usually has a tutor or attends preparatory schools (or both) for at least two subjects. When he/she moves on to middle and high schools, the race becomes tougher and tougher” (Lee, 2001:6).

![Figure 13: The Daily Routine of a Typical High School Student (the Four-Pass, Five-Fail Strategy)](image-url)

<table>
<thead>
<tr>
<th>Interval</th>
<th>Activity</th>
</tr>
</thead>
<tbody>
<tr>
<td>05:30_06:30</td>
<td>Gets up and studies for an hour or so</td>
</tr>
<tr>
<td></td>
<td>Has a quick bite and goes to school</td>
</tr>
<tr>
<td></td>
<td>Commuting usually takes more than 30 minutes on a cramped public transportation system.</td>
</tr>
<tr>
<td>07:30_17:30</td>
<td>Daily School life.</td>
</tr>
<tr>
<td></td>
<td>Takes about 7 different subjects everyday</td>
</tr>
<tr>
<td></td>
<td>Takes about 18 different subjects altogether in a year</td>
</tr>
<tr>
<td>17:30_19:00</td>
<td>Comes home and has dinner</td>
</tr>
<tr>
<td></td>
<td>Or. Stays in school and has dinner there.</td>
</tr>
<tr>
<td>19:00_22:00</td>
<td>Studies alone or with visiting private tutors at home.</td>
</tr>
<tr>
<td></td>
<td>Or. Participates in the study programs held at school</td>
</tr>
</tbody>
</table>
Parents’ obsession about education also affects their social life and their interaction with the surroundings. It is an implicit tradition not to ask parents about their children’s progress in schools and the question even became more unaccepted if it is about which college children have decided to join. Only if a child enters a respectful school, everyone congratulates his parent, while, if he fails, the parents behave like repenting sinners (Lee, 2001:6). KOTRA’s Director claimed that the pressure on parents was usually accelerated through years by the mass media which emphasize the competition process of enrolling children to high reputation higher institution. He added that that throughout the year, all the major newspapers have devoted special attention to college exams and during the peak period of college entrance exams, all media become practically agitated toward such process. He also mentioned that the purpose of educating children varies among parents where some of them aim for getting a good job for their children while others care about cultivating good characters for their children, are the two most important goals for sending their children to school at first place. According to Head of the Korean Association of Computer Education, the main reason why Korea has developed so much is because of competitive society. Koreans have a strong sense of rivalry. Especially in education curriculum, even elementary kids pack their trunk filled with books, and goes to the private

<table>
<thead>
<tr>
<th>Time</th>
<th>Activity</th>
</tr>
</thead>
<tbody>
<tr>
<td>22:00_01:00</td>
<td>Typically a student combines some of each component</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Time</th>
<th>Activity</th>
</tr>
</thead>
<tbody>
<tr>
<td>22:00_01:00</td>
<td>Those who come home directly after school continue with home study</td>
</tr>
<tr>
<td>22:00_01:00</td>
<td>Those who remain at school return home and study more</td>
</tr>
<tr>
<td>22:00_01:00</td>
<td>Those who go to preparatory schools or private tutors come home and continue with home study</td>
</tr>
<tr>
<td>22:00_01:00</td>
<td>All go to bed at about 1:00 am</td>
</tr>
<tr>
<td>22:00_01:00</td>
<td>Some portion of the home study maybe done in commercially run reading rooms.</td>
</tr>
</tbody>
</table>

*Source: Lee, 2001:7.*
educational academies. They stay late night until 9-10pm to continue their studies. This phenomenon gets deeper to rich people’s children.

4.3 Structure of the Korean Educational System

The backbone of the Korean system is one year of kindergarten, six years of elementary school, three years of middle school, three years of high school, four years of college, two years of graduate school for master (M.A.) students, and three years of graduate school for Doctor of Philosophy (Ph. D.) students (Lee, 2001:2).

<table>
<thead>
<tr>
<th>Preschool</th>
<th>Kindergarten</th>
</tr>
</thead>
<tbody>
<tr>
<td>Elemnetry school</td>
<td>Middle School</td>
</tr>
<tr>
<td>High School</td>
<td>Vocational high school</td>
</tr>
<tr>
<td>MA</td>
<td>PHD</td>
</tr>
</tbody>
</table>

*Source: Lee, 2001:3.

4.3.1 Early Childhood Education and Care (ECEC)

Early Childhood Education and Care in Korea involves different separate systems for kids under six. This is usually based on a social welfare orientation as well as education in nursery schools and kindergartens for kids aged three to five. Those two systems are separate in
terms of facilities, objectives and curriculum (Rhee et al., 2008). Kindergarten was administered by the Ministry of Education, while childcare is under the responsibility of the Ministry of Health and Welfare (MHW). Furthermore, there was a bifurcated system of childcare for families at lower socioeconomic levels and working mothers and kindergarten and hagwons for middle and upper-income families (Yun, 2009). Therefore, the government has supported the expansion of ECEC, primarily by subsidizing tuition fees through a voucher system, while the private sector played the major role in establishing and operating ECEC facilities (Jones, 2013: 5).

4.3.2 Primary and Secondary Levels

The Korean education system consists of six years of primary school, three years of middle school, three years of high school, and four years of college or university. Primary and middle education is free and obligatory. Upon the age of six, a notification of admission to a school that falls in the same residential area is sent to children (Kim, 2000). The Korean education system proved success at the primary and secondary levels. In 1945, the literacy rate was 22% and less than 20% of children attended secondary school, on the other hand, enrolment rates reached 90% for primary school in 1964, for middle school in 1979 and high school in 1993 (Sorensen, 1994). In the mid-nineties, “Korea resembles an advanced country where the ratios of 100 percent for elementary schools, 90 percent for secondary schools are better than those of most OECD countries (Lee, 2001:11). Besides, quality improvements have been achieved at the school level. This is clearly revealed in the country’s results in international tests of mathematics and science. In fact, “results from the most recent OECD Program for International Student Assessment (PISA) and the TIMSS show that Korean students are among the top performers in both mathematics and science in OECD member countries (Kim, 2002:36).
4.3.3 The Higher Education System

If the 1950s were a decade of elementary education, the 1960s a decade of middle school education, and the 1970s a decade of high school education, then the 1980s was the first decade during which higher education became important (Lee, 2001:5). High schools are either academic or vocational high schools. Considering the fact that the Korean society has always placed a high value on education, there has always been a strong demand on more and better education (Kim, 2000). This resulted in the sever competition for entering college. Pundy Pillay also confirms that “South Korea’s rate of educational expansion at the tertiary level has been remarkable. During the 1970s and 1980s, higher education was expanded in two ways: increased student enrollment, and diversified institutions of higher education. As “junior” colleges (providing two-year vocational programs) took a larger share of tertiary education, their programs were diversified to meet industrial needs. Higher education continued to expand during the 1990s. The main areas of expansion were two-year colleges and fields of engineering and natural sciences at four-year colleges and universities” (Pillay, 2010). In fact, science and engineering has dominated the higher education in all ways. For instance, in terms of enrollment, the ratio between science and engineering and other subjects was 6 to 4, while in terms of spending, the ratio is nearly 8 to 2 and this is the result of a government policy that has emphasized practical subjects from the beginning (Lee, 2001:5).

Pillay (2010) explains that the higher education expansion policy that has been adopted by the government was really effective in terms of providing highly qualified, white collar workers as well as R and D people as needed by each stage of economic development. A very clear example of this which played a significant role in balancing the demand and supply of college graduates in the labor market, was the government’s control over the enrollment quotas during the 1960s and 1970s. Thus, this minimized inefficiency in social problems and national economy which was a result from oversupplying and the underemployment of college graduates.
In 1945, after the liberation of South Korea from the Japanese colonialism, there was only one national university. During the period from 1951 to 1953, other seven national universities were founded. The links of education to economic development were one of the landmarks of the period between 1960 and 1980. In 1995, legislation was developed that enabled them to establish new universities and two-year colleges. Accordingly, there was a huge increase in the number of students, faculty and administrative staff.

Tertiary education is dominated by different kinds of universities which provide four-year programs. Most of the universities are private depending on tuition fee revenues, which are relatively high, and the other universities are national owned and financed by the government. Private universities are more autonomous and administered by a corporate board, but still they are subject to the regulations of the Ministry of Education.

4.4 Challenges that Faced the Korean Educational Reforms

KOTRA’s Director mentioned that there were many obstacles and challenges that faced the Korean educational reforms. However, the higher education system was the most system which faced many problems since it was the last stage which produces graduates to the labor market who were needed for the development of the economy. As explained earlier, the educational system in Korea was developed based on the needs of the market and the needs of each period of time. Thus, labor market responsiveness, public financing, quality, research and equity were the major challenges that met the Korean government.

4.4.1 Labor-Market Responsiveness

Labor-Market Responsiveness was a key challenge in terms of linking tertiary education to the labor market. In spite of the fact that personnel in any sector need to be schooled in order to meet the requirements of growth and competition, there was a clear evidence of over-education due to the rapid growth of tertiary. Furthermore, there were continuous complaints from employers regarding the skills of graduates and the fact that they never match the required skills
in the labor market (Grubb et al. 2006). By the late 60s, South Korea was striving to have enough numbers of engineering and science graduates, but the students usually avoided those majors. In fact, those who have the guts to join those fields regularly leave the country to pursue and fulfill their careers. South Korea suffered for a long time from different forms of mismatches in the labor market. This included issues like over-education, complaints of employers regarding the skills of fresh graduates and the scarcity of skilled personnel (Grubb et al, 2006).

As explained by KOTRA’s Director there was another fatal and contradicting problem regarding labor market in South Korea that it was over supplying personnel with high degrees who usually fail to get the appropriate kinds of jobs that they expect. There is some evidence that the South Korean system has prepared too many personnel with baccalaureate degrees who cannot find proper employment, while there are two few technicians in colleges. Besides, there were some concerns from employers regarding the lack of appropriate required skills, among the young personnel they hire, such as the ability of performing well in teams and problem solving expertise.

Despite the shift from an agricultural-based economy to an industrialized based economy, there was a weak linkage between universities and large firms at the beginning, since most of the factories used to build their own research centers. However, with the huge development in the economy, diversification, the need for a “national innovation system” was essential to develop.

Thus, the government established a new industry-academia collaboration system with the aim of serving the demands and needs of industry (Kim and Rhee 2007). In this context, the Ministry of Education has classified three types of industry collaboration with academia which are: human resources devoted only to world-class research and development capabilities, some for hi-tech development, and others for industrial technology.

Furthermore, two major types of higher educational systems were introduced to serve collaboration with the industrial sector. Contract-based education which was a kind of system
established to allow for direct reflection of the industry needs incorporated in the university curriculum and guarantee direct employment for graduates upon graduation. School enterprise system, is the second type, which enables the practical application of research needed by the industry.

4.4.2 Public Financing

The Korean government spends only 0.5% of GDP on higher education while the OECD average is 1% (Grubb et al. 2006). As mentioned earlier, due to the fact that private financing is dominating the higher education system, there was a lack of highly qualified graduates that would meet the increasingly sophisticated economy. This is evident in the fact that almost all universities are private, the majority of universities (145 out of 175) are private, and most students go to private institutions (Grubb et al., 2006).

4.4.3 Research

R and D expenditures in South Korea increased from USD 9 million in 1969, 73% of which was public, to USD24 billion in 2006, 75% of which was private. Also, there was a huge increase in the number of researchers that used to be dominated by the public sector and shifted dramatically to great dominance by the private sector. But, unfortunately the tertiary institutions did not play a sufficient role in R and D (Suh and Chen, 2007). Corporations carry out about 76% of the overall R and D in South Korea, research institutes carry out 14% and the remaining 10% only is done by universities. This 10% proportion has increased slightly over the past decade (Grubb et al., 2006). Overall, universities’ role in R and D is relatively small; however there are two major roles for universities in R and D. The first role is the support of basic research and the second role is training potential researchers.
4.4.4 Equity

During the 80’s and in the evaluation period of the educational reform, there were some serious concerns in the Korean society regarding gender, class and region. In tertiary education, gender differences are quite clear. They are always concerned about women’s ability to join tertiary education. This is evident in the fact that 20% of women between the age of 25 and 64 have a tertiary qualification. In contrast, 32% of men of the same age have tertiary qualification, which raises the issue of equity (Pillay, 2010).

4.5 Summary of the Korean Experience in Relevant to Egypt

Rapid and sustained economic growth in South Korea has undoubtedly resulted from the recent educational investment implemented by the government. Increasing the value-added of output was always the focus of the development strategies for achieving sustained productivity growth. In order to implement this, well-educated personnel were needed. In the 1960s, the government started promoting import and export substitution industries. This was started by basic agriculture like rice, light manufacturing sectors such as textiles and bicycles as well as labor intensive industries. During this period, investment in primary education facilitated a gradual change toward more sophisticated goods. Use of technology gained through foreign licensing was a key tool for this change. Moreover, in the 1970s, the government carried out a well-developed industrial policy that succeeded in shifting to the development of heavy industries such as chemicals and shipbuilding.

Another development strategy that was adopted in line with educational investment was enacting some policies that would help improve technological capabilities and developing the “access to quality of technical and vocational training”. There was also a continued development of research and development capabilities in the industrial sector that depended mainly on the skilled personnel who resulted from the government’s expansion of the higher education system.
Pillay (2010) introduced major implications can be drawn from the South Korean experience as bases for the African countries, one of which is Egypt, to help in their development. These implications include:

- **Linking economic and education planning to each other.**

  That’s can be interpreted through the concept of human capital which is driven from improving the skills and abilities of labor force and achieving higher productivity through empowering them with these skills through having access to a high level education.

- **Building higher education on a sound foundation of high-quality schooling.**

  High quality schooling can improve the capacity of the economy to develop more to be able to capture the high level of graduates which in return will benefit the overall economy performance. It is a way to transfer knowledge from the inputs (human capital) that are enriched with new ideas to the output (the economy as a whole) and get use of the best and newest technologies in favor of the development of the economy.

- **Having a mix between public and private higher education system.**

  The mix between the two systems depends on the ideas that education in its general meaning is a public good. Although the effect of having access to education enhance the skills of human capital, however, human capital development is essential for the development of the economy in return. Thus, it is important to invest in human capital through giving them the privilege to the same facilities which are under the control of the private system. In other words, students who are enrolled in the public system can be trained and have access to the labs in the facilities of eth private universities under the supervision of the ministry to enhance their needed acquired skills to be used in the labor market. There should be a profit over students leaning which is acquiring good skills. Thus, the ministry can compromise with private universities through giving them direct facilities in the preparation for opening such universities, in returns these private
universities can be obligated to educate a certain number from the top level students in the public system on their own expenses.

- **Ensuring the presence of a high education system that serves the country’s economic development through taking depending on human capital formation for the sake of growth and development.**

Korea has tailored its education system to the demand of the market needs from human capital. Human capital formation through developmental sessions to enhance their skills and capabilities were the main concern of the country since they had a vision that investment in human capital was going to be the driven reason for the economy’s development.

- **Having network in the educational system that serves the goal of development, i.e. government ministries, PRIs and private sectors with R and D.**

The whole education system was tailored for the sake of human capital development even in the ministry. Committees within the ministries were responsible for monitoring how human capital is being supported and using the concept of research and development in their education process.

- **Meeting the labor market needs of a knowledge-based economy.**

In spite of the fact that Korean classes are relatively large in terms of number of students in each class, students’ achievement levels are considered very high. This implies that teachers of South Korea were able to present excellent education as per the international teaching standards. A basic reason here was the government’s decision to hire highly skilled and competent teachers to guarantee high quality education and accordingly, lower cost per student. The government was always keen on retaining those high caliber teachers by offering diverse incentives and rewards for good performance (Pillay, 2010). Another key factor of effective HRM is job security. They provided high standards of job security that attracted highly qualified young personnel, especially at the time of rapid economic restructuring. This can be easily noted in the increasing number of high scores of high schools graduates who apply for teacher colleges.
The rapid Korean economic expansion had a great impact on human resources development in two main aspects. On the industrial level, rapid industrialization required extensive efforts to improve labor skills and knowledge. On the supply level, training system and education needed to change in order to meet the new industrial challenges.

South Korea is one of the “Asian Giants” that witnessed a dramatic development in its economy through implementing a strong educational reform based on an industrialization process. South Korea started its industrialization program almost at the same time where Egypt started its program (Park regime 1961 vs. Nasser Regime 1952). However, the path of both countries was dramatically different. South Korea was able to divert toward a developed, industrialized, and sophisticated economy, while Egypt remained as service provider country that is considered as a developing country till the moment. This was due to the difference in the implementation of each program, although both countries used to have the same objective (economic development and growth). South Korea preferred to follow a capitalist system with strong government control that lead to economic growth and as a result social welfare while Egypt favored the socialist school which is directed toward enhancing social welfare on the expenses of the country’s welfare. Although Egypt’s situation changes gradually since the 1970s and more dramatically since the 1990s with a re-direction to a capitalist economy, however, the public education system was not reformed accordingly.
Chapter 5: Conclusion and Recommendation

5.1 Conclusion

Studying the case of South Korea in educational reform proved to be very relevant to Egypt, and that Egypt has many lessons to learn from the Korean experience. This conclusion is evident from the similarity in the conditions of the two countries in the early stages of their educational reforms: both started with a focus on education-for-all strategy; quantitative coverage of elementary education (in Egypt in 1950s and 1960s – expansion of public schools), then expansion of higher public education in the 1970s and 1980s (in Egypt, opening up regional universities), then private education taking over in schools and universities. Even the challenges South Korea’s education went through is similar to what Egypt witnessed in later stages: private tutoring as an example. It was found out from the review of the Korean case that South Korea managed to introduce the right set of educational reforms starting from the early years of the reforms in the beginning of the 60’s till the development stage of the reform in the 1990s and 2000s. On the other hand, Egypt is still delayed in undertaking the same kind of reforms in its educational system. In fact, the South Korean educational reform system was able to conduct the following differences:

1. Linking education to economic development and particularly industrial development.

Investing in education as explained leads to investment in human capital that are the main input in the economy. When human capital became equipped with the apocopate education needed for their job-market, their value will eventually increase. Increasing human capital income will increase both their standard of living and the economy’s GDP which will result in the development of the economy as a whole. For a country to develop industrially it has to be equipped with the knowledge-based labor force who are actually demanded by the economy. In other words, there is a difference between the demand on labor and the demand on a certain
category of labor in specific. The economy should identify how much graduates from each section are needed for each and every industry in the economy to have a tailored based human capital that can both benefit the economy and themselves (specialization lead to higher production).

2. Developing vocational training as good as the high school system.

Most of the industrial/developed countries are having a surplus of vocational labor verses higher education labor since it is important to have a good base of vocational labor that is the main tool in the hand of the developers. For instance, for the construction of cities and roads, high level engineer is only needed for putting the plan-based and the structure of the project. However, for the construction process, the need for qualifies labor force is more needed. Egypt suffers from the absence of education vocational labor that has the educational background along with the experience. Most of the vocational labor in Egypt are working just be inheriting the job or being educated under the supervision of previous workers. Thus, the country need to develop the vocational training as good as high schools to introduce skilled and educated vocational labor to overcome the problem in the literacy of most of the vocational labor who lack the basic knowledge of their job criteria in most of the cases.

3. Investing in research and encouraging private sector’s role in Rand D.

Human capital development through self-educating is one of the factors that develop human capital skills. Self-educating is done through researching and using the latest techniques for looking through information and doing experimental practices to test the theoretical base materials being studied. Experimental practices are important to test how the labor market can benefit from educational material and investment in human capital.
4. Focusing on quality of education by adopting new innovative approaches to learning.

Nowadays, the use of technology becomes essential in our lives. Thus, depending on the primitive ways of teaching through providing students with the information in a direct way just to memorize and to be examined in became useless. New innovative approaches to learning through having research papers are a more effective learning process. Through digging and searching for the information, people will become more informative and their capabilities will develop. Competition base learning process through having group-base sessions for developing new projects from the students to be implemented by the country if they are proved to be beneficial projects to the economy should be used instead of the mouth-feeding process that is being used.

In addition, studying the case of South Korea has proved the effect of the educational reform in transforming the country from a developing country in the 60’s to a high tech developed country at the moment through achieving high level of economic development as well. The case has proven showed that the main success factor of the country’s educational system was the continuous development of the reform system to cope with the market needs. The system was not only concerned with the quantity of students to have access to education but also to the quality of education those students would have access to and how they can benefit the market place later on.

5.2 Recommendation

Therefore, the below points are the recommendations for developing the Egyptian educational system in a way that can Egypt benefit from the Korean experience:

- The low percentage of GDP spent on education should increase (as shown by the World Bank data indictors), however, it should be directed toward enhancing
the material being taught to students in way that develop their creativity and critical thinking, i.e. spending more on R and D.

- Innovative schools and research centers should be established for the sake of the development of the economy. These schools and centers should be opened for people with extra-ordinary ideas and capabilities disregarding the age or social status. It should be considered as source of investment in human capital. There has been a time in history where spending on education in Egypt was high (socialist era), however, the direction of spending was directed to finance quantity and not quality, unlike the case of South Korea.

- Furthermore, the amount of subsidy spent on public education should decrease. Only primary and middle education should be free and obligatory, like in the case of Korea. Access for further educational levels should be optional and should be paid for, or subsidized only for those who show great excellence in their primary and middle educational levels. This would create a competitive environment for innovative and high caliber youth who can develop the country. In addition, it will save the country’s huge amount of wasted resources since most of the students in public schools are not keen to develop themselves. The educational system in Egypt is based on the concept of free access to education throughout all years (primary, elementary, high school) even in public universities that only a very low value fees. In fact, the low value of fees in most of the universities resulted in the poor quality of education colleagues’ students usually have due to the inability of professors to deliver information with the high capacity of available students.

- At the same time, the door should not be opened for private high schools and universities without governmental control over it because this is one of the main problems of the current educational system in Egypt. Currently, the Egyptian economy is suffering from
the over-supply of graduates who create a problem of unemployment. According to the Central Agency for Public Mobilization and Statistics (CAPMAS), 29% of unemployed people were holders of university degrees within the age of 15 to 29 years old. In Egypt, there should be regulatory body to be supervise private universities like the case in South Korea to make sure that the level of education they are providing to students are up to the standards level of education that can help them to compete in the market place and compared to other countries.

- There should be a mix between public and private higher education system, however, this mix should have certain regulations and rules that govern it. It should have a clear objective to be responsible for building human capital foundation that serves the economy needs. This will solve the problem of oversupply of un-needed capabilities. In Egypt, there are millions of students who graduate early; however, almost half of them are not capable to compete in the market place due to the lack of the needed skills required by employers.

- Higher education should be built on a sound foundation of high-quality schooling as well. This will be accomplished through having linkages between schools and universities curriculum. In this context, there should be a well-established institution that develops the educational curriculum in Egypt. Systems that make students think critically, study different disciplines and develop new ideas, pave the way of educating them to find creative solutions for critical problems.

- Improves salary scale for faculty members and school teachers in public schools.

- Another important aspect is that enrollment in universities should not be based only on educational excellence, i.e. high grades. It should also incorporate personal skills, internal exams for each university.
What is more important is that Egypt should work on linking between economic and education planning. The Egyptian economy should develop its sources, i.e. the economy should not fully depend on tourism or the Suez Canal, and there should be other sources of income to improve the economy (develops mainly the industrial sector). Thus, to serve this approach, further care should be given to the informal sector, which represents the biggest portion of the economy, i.e. workers, technicians, etc. For improving this sector, development of the technical and industrial education is greatly needed. The part of the government subsidy to higher education should be directed toward this kind of educational system to meet factories’ needs instead of depending on poorer qualified workers who negatively affect productivity.

Egypt should ensure the presence of a high educational system that serves the country’s economic development through the building of human capital for the sake of growth and development to meet the market demand. Investment in human capital should be based on the need of the market. For instance, the need for professors, engineers, or doctors would be based on how many of them are needed in their market place and not on their desire to join such universities. This can create well-educated human capitals that are professional in their fields to enhance the economy status.

There should be experts to review and update the material in all stages to make sure human capital are having access to the most updated kinds of curriculum that can be used for the favor of labor market and the economy as a whole at the end.

Investing in human capital is the main parameter that the Egypt should take care of. Empowering students with all the required tools that can develop their skills and capabilities is a must which will generate higher income to them in the labor market and thus enhance the economy’s overall standard. Human capital formation is the key for the development of the economy which can be done through sending educational trips
outside Egypt for professional students who have the ability to get use of the latest technologies and information provided abroad. Cooperation between international universities abroad can be the main way of investing in human capital.
References


KEDI (Korea Education Development Institute) (2005). *Note on National University for Regional Development (NURI)*. Seoul: Korea Education Development Institute.


What is Local Economic Development (LED)? World Bank.


Appendices

Appendix 1: English Consent Form

Documentation of Informed Consent for Participation in Research Study

Project Title: How did South Korea achieve educational system and what was the role of its human capital in achieving this result?

Principal Investigator: Kholoud Fakhr El Din Mohamed El Sebai Abdel Halim

E-mail: khokha@aucegypt.edu

Mobile: 0111-477-5350

You are being asked to participate in a research study about “How did South Korea achieve educational system and what was the role of its human capital in achieving this result?”

The purpose of the research is on the choice of South Korea to be the focus of this paper is mainly because of the exceptional and rapid expansion of education it has achieved, and which was one of the main reasons behind its economic development to show how can Egypt benefit from this experience.

The findings may be published, presented, or both.

The expected duration of your participation is one hour.

There will not be any risks or discomforts associated with this research.

There will not be benefits to you from this research.
The information you provide for purposes of this research is neither anonymous nor confidential.

Questions about the research, my rights, or research-related injuries should be directed to Kholoud Fakhr El Din Mohamed El Sebai Abdel Halim, E-mail: khokha@aucegypt.edu, Mobile: 0111-477-5350

Participation in this study is voluntary. Refusal to participate will involve no penalty or loss of benefits to which you are otherwise entitled. You may discontinue participation at any time without penalty or the loss of benefits to which you are otherwise entitled.

Signature

________________________________________

Printed Name

________________________________________

Date

________________________________________
الجامعة الأمريكية بالقاهرة

استمارة موافقة مسبقة للمشاركة في دراسة بحثية

عنوان البحث: الميزات الرئيسية وعوامل النجاح للبرنامج التعليمي في كوريا الجنوبية

الباحث الرئيسي: خلود فخر الدين محمد السباعى– طالبة ماجستير في الجامعة الأمريكية بالقاهرة

البريد الإلكتروني: khokha@aucegypt.edu

رقم الهاتف: 01114475350

انت مدعو للمشاركة في دراسة بحثية عن الميزات الرئيسية وعوامل النجاح للبرنامج التعليمي في كوريا الجنوبية

نتائج البحث الممكن أن يتم نشرها في دورية متخصصة أو مؤتمر علمي أو ربما كليهما. المدة المتوقعة للمشاركة في هذا البحث ساعة أو نصف ساعة فقط

إجراءات الدراسة تتضمن الدراسة كوسيلة الاستفادة من التجربة الكورية للتلوث بالتعليم في مصر

لا يوجد مخاطر من المشاركة في هذه الدراسة ولا يوجد استفادة من المشاركة في هذه الدراسة

المعلومات التي ستستلم بها في هذا البحث ليست مجهولة المصدر ولا سرية ولذلك:
أي أسئلة متعلقة بهذه الدراسة أو حقوق المشاركين فيها أو عند حدوث أي أصابات ناتجة عن هذه المشاركة يجب أن توجه إلى خلود السباعى: رقم التليفون 01114475350

إن المشاركة في هذه الدراسة ما هي إلا عمل تطوعي حيث أن الامتناع عن المشاركة لا يتضمن أي عقوبات أو فقدان أي مزايا تحقق لك. ويمكنك أيضاً التوقف عن المشاركة في أي وقت من دون عقوبة أو فقدان لهذه المزايا.

الامضاء: ..........................................................

اسم المشارك: ...................................................

التاريخ: ........./................/.............