Exploring the Education History of Saudi Woman

Mutabar Alturkostany, Mizuho Iinuma PhD Candidate

Abstract

Female education in Saudi Arabia, along with the accompanied historical events, represents an interesting story of success. This education started with modest capabilities and tools, and used old traditional styles. Later, it evolved into modern education that utilizes latest technologies, and employs updated teaching strategies. This paper discusses and identifies the significant milestones in the development history of Saudi female education by investigating deeper in its history.

Keywords: Saudi female education; Education development in Saudi Arabia;

1. Introduction

Female education in Saudi Arabia is considered as a unique and special experience among well-known education systems around the world in terms of its establishment, development rate, and properties. Female education started and grew in a short period by considering the faced challenges. Actually, it is late by 30 years comparing with systemized male education in Saudi Arabia.

Saudi woman has a unique privacy among the women around the world. A number of scholars wrote about it in variety of viewpoints and diverse of perspectives. However, these previous studies seem that they do not cover sufficient fact, moreover, generally they suffer the lack of subjectivity and inaccuracy. In this respect, Tsujigami (2008) mentioned:

"Probably like other scholars, my intellectual interest was triggered by the unique gender norms of Saudi Arabia: veiling practices that sometimes require covering faces, the ban on women's driving, sex segregation in the public spheres and so forth. In spite of the strong economic and energy relationship between Saudi Arabia and Japan, both of us severely lack understanding on social and cultural matters... We rather face real obstacles to obtain information from the region. Saudi Arabia was, and still is, a destination difficult to reach" (pp 62-63).

Furthermore, Hamdan (2005) argued that western researchers who reported the situation of female education Middle East do not have that clear idea about the religion of Islam or its related roles to education. Unfortunately, the majority of those researchers inaccurately assumed the reasons behind a number of prohibitions against female's education are the Islamic roles. Actually, those researchers missed a lot of the Islamic direction in the holy book of "Quran" which support teaching both males and females. In addition, the significance position of woman in Saudi Arabia and Middle East disputes these imprecise assumptions and facile conception about the religion.

Furthermore, (Arnove, 2015) in his study of "Dialogue Among Civilizations" stressed the importance to

investigate the evolvement of education systems over time in terms of philosophy, social sciences, and history through the interaction with English and non-English speakers over dialogue space which should consider economic, cultural, and international political aspects. Added, Arnove highlighted that, such a dialogue will "make equal contributions to the theoretical knowledge production of the field of comparative education". (p.174)

Consequently, the author will review the major decisions in the history of Saudi Education in general, and in Saudi female education on particular. Moreover, the author will analyze the situations related to these decisions and the reaction toward these decisions.

In this paper the author will employ the qualitative approach of Auto-ethnography. Such a method, it allows the author to write a self-reflection experience toward the culture to provide a social perspective and understanding (Wall, 2006). Added, this method is a well-known and used in educational researches (Doloriert and Sambrook, 2009). The reason behind this choice of method is that the current study has an exploratory nature as it aims to discover more about the history of female education in Saudi Arabia. In addition, the author herself has a deep experience with the Saudi female education, as she evolved overtime whit this type of education by acting a number of various roles, namely: student, teacher, and educational supervisor. This means, the author witnessed a number of crucial events which made both direct and indirect impacts on her educational life. Therefore, the following section will narrate and tell about the faced challenges in Saudi female education over seven main stages.

2. The Significant Milestones In The Development History Of Saudi Female

Education

2.1 Stage (1): The announcement of the official female education system in (24/11/1959), and the establishment of General Presidency of Female Education in 1960.

The education reflects the nation's facts, philosophy, history, the extent of development, and hopes which depends on the nation's circumstances itself. As result, this reason behind the partial or complete diversity of educational systems in different nations. Each educational system has its own personality which derived from a number of cultural factors, thus it seems useful to set the focus on the properties of Saudi culture which consider the female as an important part. Besides, the nature of female contribution is resultant from the nation's ideology which concerns with the set of beliefs or ideas that distinguish a particular culture.

It is well known that Saudi Arabia has an Islamic ideology that forms its principals and political system. This is constituted by the royal family (Al-Saud) the founders of the Saudi Country. Hence, Islamic directions (i.e. Sharia) influence the Saudi people's attitudes in all life fields, this includes for example political system, social life, organization management, and individual work. This means, Saudi women live in cultural system that inspired by Islamic directions that considered as the light in this life and hereafter. The following are translated quotes from "Quran" and "Sunnah":

Allah (God) says in the holy "Quran": "God will rise up, to suitable ranks and degrees, those of you who believe and who have been granted mystic Knowledge". Prophet Mohammad in "Sunnah" says:" every Muslims males and female, is requested to seek for knowledge".

International Journal for Innovation Education and Research

Hence, both source of Islamic religion, namely "Quran" and "Sunnah", have promoted the Muslim people to seek education. Added, Islamic religion raised the level of Muslim scholars who keep looking for knowledge. Also, education should to be given to all Muslims, and this includes both males and females.

Further point, though both genders in Islam has the same importance when it comes to seek knowledge in Islamic religion, the official launching of Saudi female education is delayed due to a number of faced challenges which includes financial deficiency, individual disagreement, and the opposing viewpoints about female education. To expand this point, at that old time before 1959, there were a group of people who did not believe in female education due to old and obsolete inherited beliefs. Those people inaccurately thought the education is a cause of female corruption and leads to insurgency. Added, those people preferred raising a girl to be a housewife rather than being an educated person. However, there was another group of people who were aware of the importance to educate their female member of their families. So, those aware people registered their daughters in private schools, or sent them to study abroad.

It is possible to say this stage seems to be very challenging in the history of Saudi female education.

Fortunately, the wised Saudi government announced the official female education system in 1959. Then in 1960, a Royal Decree ordered to establish and to open separated schools for girls. Worth mentioning, this Royal Decree assured following religious direction in this education, in addition, it confirmed using religious presidency to supervise the process of female education. This presidency is named "General Presidency of Female Education". As result, the presidency followed a religious methodology which is based on Islamic directions and respected conservative traditions in the Saudi Arabia in order to educate the females and support them in their natural role as kind mothers and successful housewives (Seasons in Saudi Education History – Girls Education, 1992; The Journey of Female Education a Quarter of a Century, 1988; AlBakur, 1988).

In consequence to this historical decision for the sake of Saudi female education right, the Saudi government had to avail schools and to publish knowledge in a way it suites with the Islamic directions. As result, this contributed to correct a number of inaccurate beliefs about female education, and the majority of Saudi people accepted the concept of female's right to learn. So, a numerous of female schools were opened around Saudi Arabia, and the Saudi girls had a chance to start and to peruse their learning to higher education levels (Al-Hakeel, 1996).

Another point, one of the presidency mission was to send more than a committee to travel around the Arabic countries (i.e. Egypt, Iraq, Syria), this in order to find credible female teachers to sing a contract with them to work in Saudi female schools.

It is possible to mention the process of sending committees to look for and to sign contracts with female teachers from outside Saudi Arabia seems to be a "Borrowing" process that Arnove (2013) pointed out. However, instead of sending the Saudi girls abroad, the foreign teachers were brought to Saudi Arabia. This is in contrary to what the Japan did by sending a mission to China (in 607 AD) to study the empires education system, or to what the USA did by sending the American students to peruse their post-graduate education in Europe (in the 19th Century).

Moreover, during ten years after the establishment of the "General Presidency of Female Education", female education had gradually developed, and had created an integrated educational system in terms of moving from primary schools, to teachers training institute, to intermediate schools, to secondary schools,

and then to higher education (AlAmry, 2007).

It is worth mentioning, for a number of years prior to the establishment of the "General Presidency of Female Education" (before 1959), there were some pioneer efforts to educate females. However, these efforts lack the formal organization. It is possible to list these efforts as follows.

2.1.1 The phase of: Learning in home (Katateeb)

There were some ladies who dedicated their homes and transform them into small class rooms (Katateeb) to teach "Quran" and the basic of reading. Those ladies were supported by donation (i.e. monthly payments) of students' families. Added, some of those ladies were doing that for free (i.e. Charity).

2.1.2 The phase of: Private Education

As there were some families who could support their daughters and sent them to study outside Saudi Arabia, other families managed to improve (Learning in home) places and transform them into private schools. However those schools did not have a unified system, and they did not use the same curriculum as some of them used the books of Saudi organized male education, and some of them borrowed the dedicated books from female education from other Arabic countries, particularly Egypt and Lebanon.

2.1.3 The phase of: The official female education, and the establishment of "General Presidency of Female Education"

This phase is considered to be the most crucial in the development history of female education in Saudi Arabia. The wised Saudi government announced the official female education system in 1959. Then in 1960, a Royal Decree ordered to establish and to open separated schools for girls (AlTurkostany, 1998). According to AlSadhan (2015), the establishment of a separated organization of "General Presidency of Female Education" was a major social changing event in Saudi people's perception due to the resistance and the deep conservative nature of the Saudi nation. However, the religious scientist elders managed to deal with this situation by announcing their acceptance decision, and by being themselves on the top of the managerial pyramid of "General Presidency of Female Education". Such actions give the confident to the Saudi nation and gain their acceptance, as they touched the best commitment to Islamic directions that include respecting the Islamic values, conservative female clothing, the educated curriculum, and female

dedicated school transportation.

Considering the author experience in this stage, in the age of 5 years at (19XX), the author attended one of the (Katateeb), which was organized by an Egyptian lady, to learn "Quran", and the basics of Arabic reading and writings. Worth to mention, though the official female education system is started in the author's home city (i.e. Taif), the author's father was among the fanatic group of people who were against female education due to an old belief that raising a girl to be a housewife and mother is the suitable type of education for her. However, the author's mother and grandmother touched the author's passion to seek education. Thus, under their pressure, the author's father agreed to send her only to a primary school.

This situation of mothers' insistence to educate their daughter confirms the finding of Hamdan (2005) study: "Education among Saudi women has been strongly encouraged by their illiterate mothers"(p.16).

Then, the author joined a primary school in 1967. At that time, it became very common to see other people

International Journal for Innovation Education and Research

(i.e. neighbors, relatives) sending their daughters to join schools as well. Moreover, in female primary schools, the teachers were a mix of a number of different nationalities. For example, there were female teachers from Egypt, Palestine, and Lebanon who teaches science, math, history, and geography. There were, as well, Saudi female teachers who just finished primary school, or were trained for two years to be teacher after finishing their primary school. Those Saudi teachers used to teach religious subjects, and special female subjects. Added, the school manager was a Saudi female teacher too.

Teaching style was a traditional one, which is a one directional from teacher to student. The employed educational tools were only chalk, black-board, and school book. At that time, exams used to measure the extent of memorizing rather than understanding. For example, math exams used the exact same questions and digits from the school book. The relationship between students was very competitive to only get the best rank. Moreover, unfortunately punishment was the only way to deal with students' challenges. That punishment took the style of hitting on hands, or maybe by standing up on one foot with both hands up for long hours. Another point, the teacher was considered to be the center of the educational process and the main source of knowledge. At the same time, all students should respect the teacher, obey her orders, and admire her presence by standing up when she comes into the class room. This behavior of over-regarding the teacher was supported with a number of a common Arabic poems or idioms. For example, "stand up and satisfy the teacher's respects, this teacher is almost a prophet", and "I am a slave for who taught me a single letter". Thus, the role of female schools was not only educating the students. Actually, the school manager and teachers are in a critical position of power to force the discipline, and to behave students' attitude.

Considering this description about teachers' authorities, position of power, and their relation with the students, it is possible to identify some similarities with the findings of the study of Freire (1997). According to Freire (1997), in the second chapter of "Pedagogy of the Oppressed" book, the traditional relationship between the student and teacher was described as "Banking Education" system. In this educational system, the teacher owns all the control while the student has a passive role in terms of being a follower without thinking. Thus, the teacher role seems to be depositing the knowledge into the empty receptacle of a student.

Furthermore, this situation was also mentioned by Cummings (1989) when investigating the roles of the teacher and student in Japan. In this respect, according to Cummings (1989):

"Japanese schooling often portray teachers standing at the front of large classes, dully cramming facts into the heads of their robot-like students so that these students can regurgitate the facts in the crucial examinations" (p 297)

Based on the aforementioned, it looks the educational systems in different countries have similar beginnings when it comes to teaching styles and dealing with students. Then later, these educational systems get improved overtime due to specialized educational publications, or due to the increase in the humanistic awareness level.

The official length of primary schooling education was six years. At the end of each year, student had to undergo a "Central Exams" where these exams were issued and sent from the capital "Riyadh". The exams were conducted in special places (i.e. committee) with specified settings that include hiding the student name, using a unique identification number, and marking the exam papers by another committee.

Then, the results were announced over radio and newspapers, and the top ranked students' names were announced over the national TV.

When the author passed the primary school educational level, her father received congrats from the relatives. And then, the father took the initiative and registered her on an intermediate school in 1973. At that time, there was only one female intermediate school that shares the same building with a female high school. By the end of intermediate school educational level after three years in 1976, there were 5 female intermediate school had a separated building.

The education in intermediate school still has the same general characteristics of the education in the primary school, and the teaching style remained one directional. There were teachers from Syria, Iraq, Egypt, Palestine, and one Saudi teacher for English subject who was a high school graduate. Added, the manager of this intermediate school was Egyptian, while they were Saudi's in the other four intermediate schools.

One of the main changes is reducing the weekly school days to be five days instead of six, where Thursday and Friday were confirmed to be the weekend days. Another change is dividing the subject of math into three sub-subjects of Algebra, Engineering, and Calculations. Moreover, two religious subjects, namely "Tawheed" and "Fikuh", were tough by blinded male teachers. The official length of intermediate schooling education was three years. At the end of each year, student had to undergo a "Central Exams" which have the same roles as in the primary school.

The author completed the intermediate schooling education with a GPA of %99. Her father was proud and excited for his daughter to peruse the high school education, thus he gave her the freedom to decide the best high school for her. Worth mentioning, there were two main types high school education in 1976 as follows:

- 1- General high school that starts with a general year, then the student has to choose to spend the next two years in either specialty of Literal or Scientific. The graduates of this type have the right to pursue the learning in a special education collage that related to the "General Presidency of Female Education", or maybe to pursue the learning in the universities.
- 2- Teachers preparation high school, which came as an alternative to the previous teacher training after primary school that was canceled by the local authorities. The graduates of this type can be hired to teach in primary schools.

The official length of high school schooling education for both types was three years.

The author decided to register in a general high school with a hope to pursue later her education in a medical collage at a university to become a doctor (i.e. physician).

The author spent the first general year in "Taif", where she had to learn all available types of both specialties Literal and Scientific. There were a variety of subjects and sub-subjects to study. For instance, the scientific subjects included physics, chemistry, and biology. The Literal subjects included English reading, English writing, English conversation, English dictation, Arabic language, and Religious matters. In that time, there were a number of foreign teachers, noteworthy there were a number of Saudi teachers, who graduated from universities, and they used to teach chemistry, math, "Quran", and Religious matters. In addition, the school manager was Saudi too. The teaching methods remained the same and traditional as before.

In 1977, because the author got married, she move to "Al-Madinah" to peruse the second year of high

school. As the author picked the scientific specialty, the number of Literal related subjects was reduced where there was no Arabic language, history, or geography subjects to study.

Instead, the number of scientific related subjects was increased with more focus on math sub-subjects.

In terms of teaching methods, there is no major difference in "Al-Madinah" comparing to the education in "Taif". There were a number of Saudi, Egyptian, Palestinian teachers. Noteworthy, the English teacher was Indian. The author's classmates, teachers, and school management were so supportive and helpful due to the author pregnancy and social challenges because of the movement to the new city (i.e. "Al-Madinah"). In the next year, the author changed to "home schooling" education as she became a mother and pregnant with the second baby. Thus, she had to study all subjects by herself, and then undergo the exams in the school.

When reviewing the situation for the Saudi female of being a mother or pregnant, it seems it was a major cause for quitting Scholl. Actually, it was challenging to for the girl to balance between home's responsibilities and learning at schools. In addition, because of husbands forbidden, the wives forced to stop their education against their well.

The author managed to pass the high school in 1979, however she could not join the medical college as she was a mother for two children. Besides, her husband refused the idea of medical college because Saudi nation did not accept the idea of working a woman to work with males in the same place (i.e. hospitals).

2.2 Stage (2): Adult Education

The challenge of uneducated people is considered to be major one that obstacle the execution of development plans (i.e. economic, social, and educational). Thus, the majority of the developed and developing countries are keen to deal this challenge. Saudi Arabia is one of the pioneer countries which took an action in order to educate the Saudi people (i.e. males and females), and to make them good and useful citizens in the nation. In 1957, there was the first official announcement by the Saudi government for the project of "Adult Education", where joining this project was optional (not mandatory) for the 12 years and older uneducated people who cannot read or write. The efforts of "Adult Education" project were expanded in terms of the dedicated schools numbers, and the introduction of concerned policies that suit the development plans. Actually, in 1995 Saudi Arabia was awarded by (The Arabic Organization of Cultural Science and Education) for the significant achievements in "Adult Education" project, as the rate of uneducated adult people was reduced by %15 for man, and was reduced by %35 for women at that year (Saleh, 2015).

Regards the efforts of "General Presidency of Female Education", in 1983 there were five schools for "Adult Education" opened as follows: two in "Riyadh", one in "Jeddah", one in "Mecca", and one in "Dammam". The total number of classrooms was 47, and the total number of female mature student was 1400.

The presidency set special programs for "Adult Education" as there were two seasons, and each season consists of two years. By the completion of the first season, the student receives a certificate of educated adult. Then, by the end of the second year, the student receives a note of continuation to the primary school. Moreover, a specified curriculum was introduced and remained applicable until 1998. Then at that year, the education period was modified to be three years, added, a new and developed curriculum was

ISSN 2411-2933

introduced which covers the mature student concerned matters, like religious matters, health, and children rising. This curriculum considered the age and the way of thinking (i.e. understanding) that mature student had, thus it provided the knowledge gradually and easily to them (). Later, the schools for "Adult Education" got expanded, and the presidency introduced intermediate schools for them. By the end of 1996 the rate of uneducated adult female was reduced by %35. In 1998, the presidency was awarded the prize of "NOMA" form "UNESCO" for adult education (Hala, 2003).

Worth to mention, the mother of the author, and a number of her neighbors, joined the school of adult education in "Taif". The school day used to begin in the afternoon which suite the schedules of those housewives. The majority of the teachers in that school were Egyptians, with a few Palestinian teachers. As result, the mature students were so glad and gain more confidence as they became able to read "Quran", learn "Sunnah", read simple articles, and learn the basic of self-health and personal care. In one occasion, the mother of the author told about the teachers supportive and respective to the student needs and conditions were. Added, the family members used to encourage the mother, and help her by explaining the homework, and by celebrating her success at end of each academic year. Actually, as result for adult education, there was a huge educational and social feedback to the Saudi nation. This type of education provided an opportunity for who missed the education at a young age. In addition, it corrected a number of inaccurate and inherited beliefs about female adult education.

2.3 Stage (3): Higher Education for Saudi Women

Over the years, the education of Saudi females kept critically improved and took account of more levels that cover primary, intermediate, and secondary school education. Thus, the introduction of the higher education for Saudi women was the expected coronation for the general education. In 1961, King Saud University in "Riyadh" offered opportunities to study as a part-time for Saudi females in the colleges of Literal Education and Commerce. Then, that university accepted the Saudi female as a full time students in 1974. In 1968, the education collage in "Mecca" offered opportunities for females to study as a full time at the evening. In the same year, with the establishment of King AbdulAziz University in "Jeddah", females studied as part-time at the evening in the beginning, then it changed into a full-time in the morning later. This mean, King AbdulAziz University was officially the first when it comes to accept Saudi females in higher education (Halawani, 1988).

In 1970, after ten years since the opening of the first official female school in Saudi Arabia, the "General Presidency of Female Education" established the first dedicated educational college for females, which named "Riyadh Educational College". This followed by the establishment of other branches in "Jeddah", "Mecca", and other major Saudi cities. At the same time, a number of "Intermediate" colleges were established to prepare the qualified school teachers in two years studying period.

This means, higher education (i.e. undergraduate and postgraduate) as full-time became available for Saudi females in five universities that belong to the Ministry of Higher Education, and in the collages that belong to the "General Presidency of Female Education". Besides, the universities of "King AbdulAziz" in "Jeddah" and "Imam Mohammad Bin Saud" in "Riyadh" offered part-time for Saudi females (ALMobarak, 1987). This means, due to the continuous EFFORTS of the Saudi government, female education got developed

This means, due to the continuous EFFORTS of the Saudi government, female education got developed and improved over years. The annual statistics confirmed the passion and the insistence of Saudi fame to pursue the education until higher levels.

For the author, after completing secondary school, she quite the education in response to her husband wish in order to look after her children and undertake other duties as a housewife. At that time, she was looking to pursue the education, particularly her classmates managed to join the available colleges. After three years, her husband responded to her wish as the children became in age to join nursery school. Well, when submitting to "King AbdulAziz" University and "The Educational" collage in "Jeddah", she faced unexpected challenge of that the secondary school qualification (i.e. certificate) was expired according to the followed system at that time. The only official way to deal with situation was by re-doing the secondary school education. Fortunately, in that year 1982, an "Intermediate College" for teachers' preparation was established in Jeddah. That college had a flexibility to accept secondary school graduates, in addition to accept on-job primary school teacher to improve their levels and qualification. Added, in order to encourage joining this collage, the government allowed the females student to register as a full-time, and paid a double monthly salary to them for two years. Such action reflected the extent of deep concern, which the Saudi government had, to support the preparation of teachers. This was in order to better educational outcomes. The author had to undergo an interview session, then the dean of the "Intermediate College" considered the achieved score in secondary school, though it was home schooling, and offered to register the author in "Math" department. Well, at that time the author was not totally happy with this offer, however she had to accept it as it was the only available one, besides, the alternative solution was to re-do the high school. Actually, after all these years, the author feels so grateful to that dean, as the dean's decision was humanistic in terms it opened the doors to pursue with the next education levels.

The author spent two intensive years in the "Intermediate College" to study a number of theoretical subjects that included science, math, Arabic language, Islamic culture, psychology, educational assessment, and teaching strategies. In addition, there was a practical activity that involve teaching a number of classes in real schools. It was a kind of challenge in terms how to professionally act in comparison with the experienced teachers. In "Math" department, there were 23 students, 23 of them were on-job teachers, and the rest were secondary school graduates. Added, in that department, the student learned how to set educational appliances or facilities that support teaching process, and clarify the topics to the primary school pupils' minds. Such techniques were significant improvements in terms of students' previous experiences. After completing the education in the "Intermediate College", the on-job teachers went back to work in their original schools, and the rest were swiftly hired in other primary schools. Thus, the author were hired to teach math in a primary school in "Jeddah".

Later in 1984, the author noticed that all the staff in the primary school were Saudi women, this included the manager, administrators, teachers, and workers. Moreover, using the educational appliances was inessential in the subjects of math and science. The lesson used to start with an introductory practice to prepare the pupil mind, and then to let her sharing the conclusions. Teaching style was no one-directional any more, the pupils were asking and discussing, thus, they had a positive role I the learning process. Another point, previous planning for the lesson included a description for the pupil attitude and perception after the end of the class, in which this attitude and perception is measurable. Added, each lesson should include a religious direction that support the pupil's awareness of discipline. This was to meet the constituted educational policies (No. 153 and 156) of that: "female education aims to raise and aware her

with the accurate Islamic disciplines in order to support her in her duty in life", and "This must be achieve in decent, dignified, and chastened environment that goes along with the Islamic directions" (Educational Policies in Saudi Arabia, 19XX).

Regards each year final exams for primary and intermediate schools, they became no longer centralized, where each school could set its own exam, and then the result would be announced internally in the same school.

The management of the "Intermediate College" sent a letter to the "General Presidency of Female Education", in which that letter significantly recommended the author to pursue the education in one of the presidency colleges. While the author was waiting for presidency response, she spent three years working as a teacher in a primary school. However, due to the lateness responding to that letter, the author decided to join "King AbdulAziz University" as a part-time student for a bachelor qualification. According to that part-time system, the student should attend late classes in the evening for only four weeks, then it was student's responsibility to self-study the curriculum. After that, there would be a final exam at the end of the semester. Moreover, student who were on-job could have official excuse to be absent from their work during exams' times. Actually, part-time system allowed numerous of individual (men and women) to pursue their education, particularly those who had jobs to attend in the morning (e.g. like the author for example), and those who engaged with home duties like housewives.

Another point, in "King AbdulAziz University" there were few majors which supported part-time system, namely Administration science, Social science, English language, and Islamic studies. The author picked the major of Administration science as this major involves learning a number of math related subjects, like Accounting, Basics of economy, and Operational researching. This in addition to the other Administrational science subjects. Further point, the number of students in the classes was huge which reflects the deep concern of Saudi women in education. At the same time, it shows the noteworthy interest of Saudi government to provide more educational opportunities that suites the various conditions of Saudi people. Added, some of lectures were Saudis, and the most of them were Egyptians. According to the signed contract with the Egyptian lectures, they teach full-time students in the morning, then they teach part-time students for additional allowance. The office hours for both full-time and part-time students were in the morning. Moreover, there were some classes that taught by men from Saudi Arabia, Syria, and Egypt. However, the classes was running via closed circuit televisions (CCTV) as the set constituted educational policies force gender-segregation in all Saudi schools and Universities.

Learning Administrational science added more managerial experiences and skills to the author who had a mathematical and scientific backgrounds. For example, the concept of leadership, positively affecting people to get their targets, Practical procedure to make decisions, and other skills that helps even in the daily life. The author graduated and ranked the first honor. Thus, the administration of Business and Management College invited her to pursue as a full-time to get the Master qualification in the same major. Such an offer, it critically encouraged the author who felt so grateful for this support to pursue with the higher education. Though, the main challenge was that, as a full-time student, the author had to attend the classes in the morning, which contradicted with the author job in the morning as a primary school teacher. What made it worse is that, there is no direct contact between the authors' place of work (i.e. primary school), which belonged to the "General Presidency of Female Education", and the university, which

International Journal for Innovation Education and Research

belonged to the Ministry of Higher Education. Fortunately, the principles in King AbdulAziz University were so understandable, and allowed the author to pick the late classes (i.e. after noon) with tolerated attendance. Added, the manager of the primary school set the working hours to be in the morning times every day. In addition, the husband of one of the author's friend raised request the higher authorities in the presidency, and managed to get with to get exceptional permission for the author to continue the education while she was on-job. Such a noble actions from all those people reflect the magnanimity of Saudi community when it comes to learn and seek further education. Later, the author passed all the needed modules, and submitted the thesis to get the Master qualification in 1996. As result, she promoted to an educational supervisor in the "General Presidency of Female Education".

2.4 Stage (4): The annulment of central final exams in high schools

In the 16th of June 2008, the Ministry of Education in Saudi Arabia made a critical decision of annulling central final exams in high schools. Thus each school would locally set the its final exams according to specific standards. Instead, the student should undertake special exams of "Measurement" and "Abilities". There were several of reactions towards this decision in terms there were supporters and opponents.

On the one hand, According to a vote of 2282 participations, which conducted by Okaz (2008), about %89 of opponents warned that annulment of central final exams in high schools does not offer the equality nor the fairness when evaluating the high school students, as the educational abilities and facilities were not the same around high schools in Saudi Arabia. This means, the final exam difficulty would be on the school, but not unified as when it was central. Moreover, about %85 felt this decision would weaken the students' abilities to study, and it would reduce the overall scientific value of the Saudi high school qualification. Added, around %61 believed the annulment of central final exams would encourage the corruption and dishonesty when it comes to pass unqualified students on the expense of the serious and qualified ones. Though the high rate of opponents, only %54 of the participants wanted to go back to the central exams.

On the other hand, among the supporters, Almeshikih (2011) mentioned the annulment of central final exams was an accurate decision when considering the quick development in the nowadays field of education. This is in addition to advancement in the modern education techniques. Actually, that old and traditional final exam became more like a target itself rather than being an evaluation process. Hence, it became like a source of annoying and worries to the student and his family, in which this does not support the educational process, at the saem time it contradicts the first group of educational policies that constituted: "The education is process that aims to evaluate the student educational knowledge". Furthermore, according to Abu-Mansoor (2011), assigning the assessment of the final exams to the school itself was a precise decision, as this school used to evaluate the student through monthly and yearly exams, since the first year of primary school until the last year of secondary school, except for the final exam in the last year of secondary school, which represented %30 of the overall score. Added, Abu-Mansoor (2011) pointed out, in case there was an empirical research to study the alert conditions of setting these central final exams, and the criticality of situation in case these exams were leaked, in addition to the suffer of student and their families, then this research would clarify that there are more negatives in comparison with much few positives of conducting the central exams. Further point, Mokhtar (2011) believes the reason of annulling the final central exams was to deal with the panic and fear of central exams at the student perceptions, in

which such feelings led to a number of psychological challenges.

Besides, the Ministry of Education would save millions in the budget by cutting the cost of setting these exams in terms of needed committees, printing papers, paying additional allowances, in addition to unneeded expenses. Moreover, by doing the universities' assessment test would reflect better idea about the student ability to undertake the higher education. This is in addition to other standards requested by some colleges, and the interviews. Therefore, counting on three criteria's, namely secondary school GPA, "Measurement" test, and "Abilities" test seems to be better for universities to make an accurate judgement when accepting or rejecting the student.

As the author worked in one committee of central final exams, she support the decision of annulling the final central exams. Because the schools were in a place of honesty and responsibility for students evaluation and exams for 11 years (from primary school to secondary school), thus it will not that different to take the evaluation out in the last year. To expand this point, the score in the last year in the secondary school will not make that impact when it comes to register in the university, because universities criteria's have changed. Moreover, the modern development in the educational process shows that there is a need to have more than one criteria to make an accurate decision, and introduction of "Measurement" and "Abilities" test, in addition to secondary school GPA, should meet this development.

2.5 Stage (5): The amalgamation the educational authorities

The 2002 witnessed one of the most critical decisions in the history of Saudi education, which was the amalgamation of "General Presidency of Female Education" to the Ministry of Education. This major change happened after the establishment of the presidency as a standalone authority for 42 years that concerned with female education for the levels before the universities. Worth to mention, the amalgamation happened on the senior managerial level, thus the female students still attend separated schools and study places.

In this regard, Hamdan (2005) refers this decision to the incident of female primary school' fire in "Mecca" in 2002, where 15 young girls died. Thus, this amalgamation came as a result to request from both general public and the government in response to that incident. Although. Al-Fayez (2002) denied any link between the fire incident and the amalgamation decision under the pretext that presidency faced a number previous accidents which impacted on female teachers and students. Hence, the amalgamation decision was the result of improving the education process by the Saudi government. Al-Towajri (2002), who is a member of the Saudi Consultative Council "Shura", highlighted this amalgamation would save a lot of efforts and provide better abilities for all educational sectors. In addition, Al-Towajri (2002) mentioned this decision was demanded for a while ago because the gender segregation in education was only needed at the beginning with a certain conditions when establishing the "General Presidency of Female Education", however the time passed and the conditions changed over time, which means there is no more need to separate the senrio management.

Then, Al-Towajri (2002) hoped there would be a joint major change in the structure in terms the Saudi woman would act a more responsible role rather, because the women herself is the best when it comes to learn about the needed and it take to accurately response in female education.

Another point, Hamdan (2005) mentioned there was a resistance by the a fanatic group:

"resulting amalgamation provoked a revolt among religious conservative scholars who approved of

women's education only under the direction of ulama (conservative religious scholars). "(p.44) In this regard, the opponents argue that, the amalgamation would result to ignore the role of the religious group, particularly the leading roles. Added, according to those opponents, this amalgamation would fail the entire educational process of females in Saudi Arabia. However, the Saudi minister of education (i.e. Dr. Ahmad Alrasheed) at that time announced on the media that the decision of amalgamation was conducted after intensive studies in order to achieve better goals that aim to increase the quality of managerial performance for both men and women. Furthermore, this Saudi minister of education asserted that there will be no mixing between men and women at all (SPA, 2002).

When it comes to the female student families, parents, and the female worker in the presidency they normally received the decision and accepted the instructions, though the resistance and argument of the opponents. In which it reflects the deep trust and confident with wisdom of Saudi government as clarified by the Saudi minister of education.

In the 30th of April 2003, the name of the ministry was changed into the Ministry of Upbringing and Education. It is possible to mention the new name reflects the direction towards more focus on the upbringing dimension which concerns with the knowledge, psychology, skills, and perspective of a student. Note to mention, there was a project to improve the Saudi educational curriculum in schools which started in 1999 at the pride of the "General Presidency of Female Education". The zone of "Jeddah" city was assigned to develop the curriculum of math and English language. The author was among the group which dedicated for math curriculum in primary schools. After the decision of amalgamation in 2002, a higher committee from the ministry evaluated the outcomes of the project. Some of these outcomes were rejected, and the rest of them were approved. The curriculums of math, Arabic language, Religious Science were appreciated and received the recommendation of the higher committee. After that in 2004, the improved curriculums were printed and published in all schools around Saudi Arabia for both males and females. In this regard, the inner cover of these books announced the names of female authors with official printed confirmation of "The Ministry of Upbringing and Education decided to use this book in all its schools". Such an event, it was magnificent achievement in the history of female education in Saudi Arabia, as the used curriculums in female schools were different than the used ones in males' schools.

In the 14th of February 2009, a Royal Decree ordered to assign (Noora Al-Fayez) as the first Saudi vice Minister of Upbringing and Education for female education affair. As (Noora Al-Fayez) was first time Saudi female who employ such high position in the country, this considered as a positive impact of the amalgamation decision on female education history.

Recently, in 2015, another Royal Decree ordered to merge the Ministry of Upbringing and Education with the Ministry of Higher Education into one ministry that named "The Ministry of Education". As result, this new ministry became the biggest one in Saudi Arabia with a record budget that passed 217 billion Saudi Royals (about 58 billion USD) which represent %25 of the total Saudi budget. A number of observers and academics mentioned that it was a brave decision which will speed up the process of universities independence in terms they will become self-financing, in which this is the used system in the American universities (Sabq, 2015).

Over all, the decision of merging the two ministries into a big one received significant positive feedback,

as the majority of educational specialist mentioned it reflects a precise educational and economical viewpoint. In this regard, Al-Habeeb (2015), who is a member in the Chamber of Commerce in "Riyadh", pointed out this decision will unify the plans, politics and strategies of education. As result, there will be exchange in fruitful experiences and abilities. Added, the researches in the field will be shared and benefit the educational process in the country. Moreover, he mentioned the merge will mind the gap between the general education and higher education levels, where this gap represented a critical challenge over time for the educational ministers. As result, this will have a positive impact on the market and on individual's production.

Moreover, Al-Mutlak (2015) the dean of libraries affair in "Haiel University" pointed out this merge is considered as an application to the concept of managerial re-engineering as it involved cancelling a number of additional councils and committees in both general and higher educations. Such an employing of this modern concept will support reaching the goals effectively.

Furthermore, AL-Shamrany (2015), who is the Deputy Governor of the Education Assessment Council, believes this merge will end the isolation and remove the weak links between two major universities in Saudi Arabia. Added, the new Ministry of Education would have full control over all its sectors in order to set more accurate coordination to reach better achievements.

In addition, Al-Saadon (2002) requested to adopt the initiative of "Investment in Education", and call the entrepreneurs and private sector to capitalize to improve the education, as this would have a positive impact on the development and growth of the country.

The author sees the changing is the natural path for development. Though the outcomes of the merge decision still not that clear, the author hopes it will have a fruitful impact on the educational organization. Moreover, she wishes this change will significantly improve the process of education development by minding the gap between the previous ministries, and by giving more flexibility to the education sectors to deal with the administrative bureaucracy. Moreover, the author optimisms this merge will increase the chances to seriously coordinate with needs of the markets to accurately direct the graduates towards the technical and applicable majors, instead of over stoking in the literal majors.

2.6 Stage (6): Scholarship Saudi women abroad

The education of the Saudi female went through calculated growing plans, and it kept developing over time. This educational never stopped at the schooling levels, actually it passed that and reached higher education levels in the universities in the 1960s. The Saudi student had two options after completing the secondary school. The first option was to pursue the education in girls' colleges. The second option was to pursue the education in girls' colleges. The second option was to pursue the education in a public university, or in a private university which expanded after the governmental approval, in 2000, for the private sectors in invest in education.

Later, the girls' colleges and universities opened chances to Scholarship Saudi women abroad to gain higher educational qualities (i.e. Master and PhD) in a number of various majors that are not available local, and may be needed for the growth plans. Actually, this opening reflects the deep believe of the Saudi government in that: education is the first step in the cultural and literal freedom. In addition, it reflects the admission to the important role of the Saudi women, who represents the have of the nation, in the cultural development of Saudi public. Moreover, the abroad scholarship policies respected the Islamic conditions

in terms of escorting the female student with one of her direct male relatives "Mahram" (e.g. father, brother, husband, son). Added, for those who could not meet the needed condition for abroad scholarship, it was possible for them to apply for the (internal shared scholarship) as an alternative, in which this internal scholarship allowed a numerous of female students to gain higher educational qualification.

In fact, the scholarships presented bright examples of Saudi females who became internationally famous. The following are some examples of them.

- (Dr. Khawla Al-koragh) the senior scientist of cancer researches in "King Faisal Specialist Hospital and Research Centre". She won the prize of Harvard University of scientific achievement in 2007.
- (Dr. Sameera Isalm) is the first who gained the professor qualification among all Saudis (men and women) in Pharmacy in 1974. And she won the prize of UNESCO in 2000 when she nominated among the best 32 excellence female scientists in the six continentals. Noteworthy, by she became the first Muslim and Arabic woman who received this nomination.
- (Dr. Hayat Sendi) who is one of the most famous scientist in bio-technical field. One of her most important invention is the Magnetic Acoustic Resonance Sensor (MARS), in which NASA officially accounted this sensor in its experiments. In 2009, PopTec organization announced her as one of the best 15 scientists around the world in different scientific fields, in which this organization described (Dr. Hayat Sendi) as the one led the change in the world through her researches. In 2012, she was among the Newsweek list of the 150 women who shake the world. In 2012 and 2013, she was among the Arabian Business list of strongest Arabic women. Right now, she works in Harvard University as professor in Nono-Technology, besides she is nominated to win Nobel Prize.
- (Dr. Thorya Obaid) who was the Executive Director of the United Nations Population Fund, and the and an Under-Secretary General of the United Nations. She was the first Arabic woman who took the responsibility of agency related to the United Nations between 2001 to 2010.

The scholarships were exclusively dedicated to those who works in the universities, and were set to study a specific number of scientific, medical, and rare application majors that needed by the growth plans. This is to mind the gaps of the needed majors in Saudi Arabia, and to replace the foreign workers with Saudi ones. However, the abroad scholarship program of King Abdullah created a numerous opportunities for the Saudi citizens (males and females) to pursue their education, in which this program reflects the Saudi government believes in Saudi people as the real wealth of the country.

This scholarship program, which announced in May 2005, comes along with a strategic vision to improve the education and enhance all its sectors locally and internationally. It aims to introduce a multiple source on knowledge to enrich the education's philosophy, and politics, and curriculums. The first level started in 2005, and reach now to the tenth level in 2015. This program allowed more than 150 thousand students (males and females) to gain the qualification of bachelor, Master, and PhD qualification in high ranked universities around the world. In addition to gain useful knowledge and skills, this program aimed to facilitate the cultural exchange between Saudi Arabia and other international culture in the age of globalization. Added, as the number of the scholarship students dramatically increased, the number the Saudi cultural offices was increased to reach 34 offices around the world, in which these offices are with the qualified staff to support the scholarship students. The author is one of those who had the chance to pursue the higher education in Japan at Tokyo University of Technology. According to Al-Mohandis (2012), the investment in Saudi people was the main factor behind the increment spending on educational sector in Saudi Arabia, in which it aims to build an economy that based on knowledge, to support scientific researches, and localize the technology in Saudi Arabia.

Al-Otaibi (2014) highlighted the scholarship program was and still a fruitful opening for Saudi woman. Such a program it rediscovered her abilities and freed its gifts. Through that program, she managed to amaze the world by achieving a numerous of research prizes and invention awards. Saudi women gained the respect by showing the conservative Islamic attitude, and by notably presenting the discipline during their educational daily life.

No doubts, the abroad scholarship program of King Abdullah are an educational and growing pioneer project, which has positive outcomes inside the Saudi nation. One of these outcomes is critical improvement for education, increasing the qualification standards, improving the markets and job levels, adding more investment chances that would be led by the new generation who collected the knowledge and expertise of other nations.

2.7 Stage (7): "Improving" king Abdullah's project to improve the education

In 2012 witnessed one of the most critical events in the history of Saudi education, as the sectors of general education, higher education, and manpower training received the biggest dedicated budget in the modern history of Saudi Arabia that reached more than 168 billion SAR (about 45 billion USD). As result, a number of programs to improve the education took place. One of the most important programs was "Improving" king Abdullah's project to improve the education. The Saudi government announced the continuous working in this program for another 6 years (Al-Sarq Alawsat, 2012).

This program has the responsibility of providing the useful contribution in the growth plans which required special education. Thus, the Saudi students (males and females) will gain the values, knowledge, skills that qualify them take the lead in the 21st century. At the same time, this program aims to deal with future challenges by undertaking the continuous improvement. Moreover, this program seeks to positively enhance the Saudi competitive abilities, and building a knowledgeable community though running a number of sub-programs that includes:

- 1- Building a complete standard criterias of uprising, assessment, and accounting.
- 2- Running a number of main programs to improve the education. For example, the continuous professional training for workers in education, improving the curriculums and subjects, enhancing schooling environment to support education, localizing the technology, and conducting student services and out class activities.

The author worked among a committee to improve the curriculum of science and math subjects for the first three levels in primary schools. She supervised the implementation of imported American curriculum of "McGraw-Hill". The implementation started in 2008, and got gradually expanded for three years. During that time, a number of challenges were detected in terms of the typos and observations on the books. There other activities that involved standardizing the need skills for these curriculums, undertaking special preparation training for program supervisors, setting up a dedicated training materials, train the subjects

supervisors to use the new teaching strategies, and measuring the achievements. The program started according to plan that was set in 2011.

Based on the aforementioned, it is possible to say the investment in Saudi people through education is the clear theme in all the Saudi budgets and growth plans. The direction toward the improvement of education (e.g. general, higher, training, investment) is a modern cultural one. At the same time, it is the path to success over the time, and to provide the suitable environment for creativity and building the future.

3. Conclusion

The economic improvement, in addition to the social and cultural growth, depends on the count of the educated people (males and females), who take the responsibility to promote their nation to higher levels of development. The education qualifies the man and woman to take the lead in various working fields. Also, by education, the awareness gets formalized and increased with respect a number of essential topics that concern the nation. As result, this will support the growth process to build better life. Accordingly, Saudi Arabia seriously worked hard since its beginnings to introduce and expand education. Thus, it built numerous of schools, institutes, universities, and adult education centers around the country in order to avail the educational opportunities for all the citizens (males and females). Though, learning and seeking knowledge are highly promoted by Islamic directions for both all its followers (males and females), unfortunately female education was a bit delayed due to an expired beliefs and obsolete inherited customs at the establishment of Saudi Arabia. Nowadays, after about half century, it is possible to say women education significantly succeeded. This is because Saudi women managed to gain PhD qualification after she was totally uneducated, and she managed to attend international universities in short terms after she was only attending in-home schooling "Katateeb". Moreover, there are two critical factors behind this fruitful education system of female education in Saudi Arabia. The first factor the comment of the Saudi government to educate Saudi females with the consideration of the Islamic direction. Thus, the government separated the female schools and universities, prepared appropriate education environments, and set specific curriculums that suite the female nature, and enrich her perspective. This is in addition to huge financial support in order to achieve better education improvement. The second factor is that. Saudi woman faced the challenges by herself, increased her efforts, suited herself with the local conditions, and made use of the offered opportunities until she managed to prove herself on the world wide level. Thus, Saudi woman become a unique example for the significant achievement.

Female education in Saudi Arabia is a unique experiment that has an excellence nature. Moreover, it is derived by the Islamic directions, and respected gender segregation in all educational levels. Furthermore, it is an experiment that succeeded in a fanatic nation which was refusing female education. Such an interesting experiment, it deserve further investigation and deep analyzing to gain more benefits that make use in any social, cultural, or political changes within the community.

4. References

Arnove, R. (2015), Comparative Education: Dimensions and Trends .A Contribution to the 50th Anniversary Celebration of the Japan Comparative Education Society, 2015. p.174.

International Educative Research Foundation and Publisher © 2021

Arnove, R. (2013) Introduction: Reframing Comparative Education. Comparative Education: The Dialectic of the Global and the Local. Rowman & Littlefield Publishers, Inc.

Hamdan , A. (2005), Women and education in Saudi Arabia: Challenges and achievements. International Education Journal, 2005, 6(1), 42-64. ISSN 1443-1475 © 2005 Shannon Research Press. http://iej.cjb.net.

Tsujigami, N. (2008), Saudi Women: A Japanese Perspective. Woman in Saudi Arabia Cross - Cultural Views. Ghainaa Publications, First Edition, 2008. (Print). P.62,63.

Wall, S. (2006). An auto ethnography on learning about autoethnography. International Journal of Qualitative Methods, 5(2), Article 9. Retrieved [27 JUN 2015] from http://www.ualberta.ca/~iiqm/backissues/5_2/pdf/wall.pdf

Doloriert, C, & Sambrook, S. (2009). Ethical confessions of the "I" of autoethnography: The student's dilemma," Qualitative Research in Organizations and Management: An international journal, 4(1), 27-45.

Seasons in Saudi Education History – Girls Education (1982) The Journey of Female Education a Quarter of a Century, Ministry of Education, Statistical Information and Educational Verification Section, Riyadh, 3-8. (Arabic Journal)

Albakur, F. (1988), The history of female education over quarter century in Jeddah, Al-Madinah Press, Jeddah, 19-20. (Arabic Journal)

Albakur, F. (1988), Saudi woman and education – investigating the historical development level of Saudi woman, Media Circle, Riyadh, 23-31. (Arabic Journal) Al-Hakeel, S. (1996), The systematic and policies of education in Saudi Arabia, Offset Technology Press, Riyadh, p193. (Arabic Journal)

AlOtaibi, R. (2014), Half century on women education – passion and growth of the beginnings, The knowledge Journal, p 1. (Arabic Journal)

AlTurkostany, M. (1998), The impact of the technical education and vocational training programs when it comes to provide working chances for Saudi girls, unpublished Master thesis, Business school, King AbdulAziz University.

AlSadhan, A. (2015), Channch reisitence in Saudi community – Interdicting females schools as example, Al-Bayan, (Arabic newspaper), URL [http://www.albayan.co.uk/text.aspx?id=2021], on [27 JUN 2015] Cummings, W. (1989), The American Perception of Japanese Education. Comparative Education. Volume 25 No, P 297.

Saleh, S. (2015), The achievement of Saudi Arabia in adult education in King Fahad Pride – a comparative study, Education Technology. URL [http://www.khayma.com/education-technology/OlEducation3.htm] ,on [12 JUN 2015]

Hala, S. (2003), Adult education, Teacher Journal, Ministry of Education Press. (Arabic Journal)

Halawani, I. (1988), The work of Saudi woman and the faced challenges, PhD thesis, Clermont University in the USA, Okaz Press, Jeddah, pp 39 - 53.

ALMobarak, M. (1987), Saudi girl from the tent to university robe, The Arabic Journal, Vol 10, Issue 1, pp 101-102.

Educational Policies in Saudi Arabia (1999), Chapter 5 – Special Policies – Feamle Education, p 153.

Okaz (2008), The annulment of central exams led to losing the qualification value, Arabic newspaper, Issue 2282, p 16.

Almeshikih (2011), The annulment of central exams, was it a right dicsion?. Alriyadh newspaper, Arabic newspaper, Issue 3457, p 5.

Abu-Mansoor (2011), The annulment of central exams, was it a right dicsion?. Alriyadh newspaper, Arabic newspaper, Issue 3457, p 5.

Mokhtar (2011), The annulment of central exams, was it a right dicsion?. Alriyadh newspaper, Arabic newspaper, Issue 3457, p 5.

Al-Fayez, A. (2002), the Middle East newspaper, Arabic newspaper, Issue 8790, p 8.

Al-Towajri, A. (2002), the Middle East newspaper, Arabic newspaper, Issue 8518, p 10. Sabq.com, (2015), local new, Arabic and Electronic newspaper, URL [http://sabq.org/Omxgde] on [16 MAY 2015]

Al-Habeeb (2015), Alriyadh newspaper, Arabic newspaper, Issue 17023, on 1 FEB 2015.

Al-Mutlak (2015), Alriyadh newspaper, Arabic newspaper, Issue 17023, on 1 FEB 2015.

AL-Shamrany (2015), Alriyadh newspaper, Arabic newspaper, Issue 17023, on 1 FEB 2015.

Al-Saadon (2002), Aljazeera newspaper, Arabic newspaper, Issue 10772.

Al-Mohandis (2012), Alriyadh newspaper, Arabic newspaper, Issue 15908.

AlAmry, S. (2007) female education in Saudi Arabia between the government encouragement and community rejection, term paper, the international Conference about Muslim women cases in the current ages, Malaysia.

Copyright Disclaimer

Copyright for this article is retained by the author(s), with first publication rights granted to the journal. This is an open-access article distributed under the terms and conditions of the Creative Commons Attribution license (http://creativecommons.org/licenses/by/4.0/).