Research Paper

Empowering the Egyptian's Education in the Era of Covid-19

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ABSTRACT

There is no doubt that the COVID-19 crisis harms the outcomes of the educational process in all countries, and it should not underestimate. Now, governments have an excellent opportunity to take advantage of this crisis by reconsidering the development of their education systems, introducing new methods, and providing good quality education for future generations. We explore the challenges and prospects of education in Egypt before and during the outbreak of a covid-19 pandemic. We discuss the following: a) the Egyptian education reform project including its implementation and the assessment, b) the future vision of higher education development, c) Research excellence and capacity building, d) Skills and knowledge developments. Although in the last two decades Egypt made a great effort to improve its education, the outreach of education suffers from the severe challenges facing schools and universities concerning the high costs of establishing infrastructure, maintenance, and training in acquiring digital cognitive skills. Also, the inequality and social justice for providing education for all programme.

In conclusion, the educational technology-based systemic reform in Egypt is challenging in part because the ways of thinking about implementation are often flawed. The success is possible if we transcend the implicit assumptions about the concepts of learning, digital technology, equality, and community development. Education has been one of the least interrupted fields during the ongoing coronavirus crisis. Despite the controversy surrounding the e-learning system, and the lack of preparation under the pressure of emergency circumstances, schools and universities have tended to accept this new system to continue the educational process. Finally, employing a comprehensive technology strategy can help us to do so while not going beyond our limited resources.

KEYWORDS: *Education Reform, Educational Digital Technology, e-Learning, Capacity Building, Covid-19*

I. INTRODUCTION

At the end of December 2019, the world was surprised by the outbreak of the Coronavirus, and immediately the governments took precautionary decisions to provide protection and health safety to prevent the spread of infection among citizens. All individuals needed to go through the experience and adjust their ordinary daily life to stay at home, protecting themselves and their families.

Without preparations, most countries transformed their political, economic and social systems to accommodate emergency conditions. They followed a policy of social distancing by the closure of schools and universities, as well as stopped all cultural, and prevented conference activities, public transportation, air traffic, and closed the borders between countries. Also, the traditional education system turned to a remote education system via the Internet.

The spread of the Corona epidemic in the world resulted in randomness in taking appropriate decisions to confront this epidemic and not spread it. The governments have taken many options at the political level such as complete cessation of all economic activities which affect the provision of all services in the areas of tourism, restaurants, markets, public transport, service provision and health care. Also, the application of social distancing restricted some of these economic activities. These exceptional measures have varied between countries according to their infection and death rates. Some might explain that these choices represent the comparison between the lives of citizens and saving the economy. From this point of view, saving the lives of citizens requires tightening procedures, which reduces the rate of infections and deaths, but at the same time weakens the economy, reduces the rate of production, and increases unemployment, as well as cuts budgets for

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education and health, etc. Facing these health risks, individuals choose to adhere to the precautionary measures and the policy of social distancing, while bearing the resulting economic burdens [1-9].

Indeed, the world has changed, and this epidemic has become a threat to economic stability to achieve sustainable development goals by 2030. It is worth noting that, before the spread of covid-19, most countries found it difficult to develop their traditional education systems. Also, the transformation processes in these systems were slow, even in developed countries.

Despite the World Health Organization's warnings, the response of the countries to the risk of a pandemic outbreak varied from one country to the other.

The emergency response to this epidemic included the following:

1. The leaders and community members should adapt to the changing fast events throughout the day.
2. The governments should take appropriate decisions based on documented data.
3. Providing health guidelines and changing societal behaviour for individuals and institutions.
4. They should pay attention to the provisions of social care and assistance to the affected low -income individuals and families.
5. Cooperating with all active partners from the private sector and civil society,
6. Acquiring self-learning skills.
7. Exchanging the experiences between countries and not repeat mistakes, - it has shown that the virus does not threaten one state without the other and does not differentiate between people in the race, colour, gender, religion or wealth.
8. It is necessary to invest in supporting innovative research to develop education systems and take advantage of the possibility of distance learning and the use of digital technology.
9. Diminishing the gap and equality in educational opportunities
10. It is essential to raise the efficiency of teaching and learning processes.

For example, the Chinese government took the initiative to launch a national educational platform to help millions of students. Especially in high schools to learn remotely during school closures due to COVID-19 [10]. Also, it broadcasted lessons for the elementary level on public television to make this digital solution work seamlessly for millions of kids. Telecom and high technology companies have strengthened the Internet and offer digital technology courses to students and teachers for free.

There is no doubt that the COVID-19 crisis will harm the outcomes of the educational process in all countries, and it should not underestimate. Now, governments have an excellent opportunity to take advantage of this crisis by reconsidering the development of their education systems, introducing new methods, and providing good quality education for future generations. These attempts made to stop the deterioration of the educational system during the year 2019/2020. Some countries are moving towards facilitating the procedures for closing schools and universities in the year 2020/2021. The world has become under threat of a second setback for this violent viral attack, which will undoubtedly have a significant impact in a terrible recession in countries' public revenues and commitment to budget allocations, and this will severely reduce the shares to education for all countries.

It expected that the effect extends for many years to come. It is worth mentioning that in the last two decades the world has witnessed strenuous efforts to develop education and make it available to all by 2030, according to the goals of the United Nations Sustainable Development Group. We are living in an education crisis due to the precautionary measures to close all schools and universities, which affected the lives of 1.8 billion students around the world [9]. There is no doubt that this state of emergency has resulted in more losses at the political, economic, social, and health levels for most countries. Citizens' life has stalled, especially in developing countries that suffer from the scarcity of resources to cover the cost of education for their children. It has shown that keeping at a distance and long-term stay at home has negative repercussions on the entire educational process, especially in the field of quality education and learning outcomes. This pandemic has swept the globe, closing schools in both rich and developing countries. That is almost all school-age children or 24% of the world's population.

The continued closure of schools and universities for indefinite periods to combat the epidemic will increase the number of students drop out and increase the unemployment rate in society. It is worth noting that the world has witnessed during the past two decades many economic, social, and health crises, for example, the financial crisis is known as Wall Street in 2008, and the appearance of Ebola epidemic, etc. The economic recession had severe impacts on public budgets and household disposable income.

During the Corona pandemic, the world is witnessing a double crisis in the education system because of extended school closures, and severe economic recession. Therefore, we are in dire need to develop a clear roadmap to face these challenges according to the imposed data, so that we do not waste time and commit mistakes that cannot be corrected. Even before the COVID-19 pandemic, many countries suffer a learning crisis [6].

According to the World Bank report [9], more than 50% of children age ten years old can't read and write. In developing countries, the learning opportunities still depend on the place of birth, parent's wealth, and student gender. To address the negative impact of closing schools and universities, governments have resorted to the online learning system. The schools were stimuli to convert their educational programs to the distance education system, by following the capabilities and tools provided by educational technology, as well as by using print, audio, and visual means such as radio and television. Unfortunately, developing countries do not have sufficient capabilities to implement online learning.

This system requires the provision of computers, digital technology, and an Internet connection, as well as experience in designing and preparing the study programs. In this regard, it is essential to diversify confiscation and helping these countries to benefit from the distance education system. We need to put in place a clear policy to help low-income families who cannot bear the burdens of the outbreak of this epidemic.

Those children are desperate to go to school, and the teacher does not cancel his roles in the online education system. We hope that finding an appropriate vaccine and the receding of the epidemic, the necessity of a gradual return to schools and universities to its previous state.

Great care must take when pursuing the continuity policy, especially with the trend to reopen schools and universities during the academic year 2020/2021. All partners must cooperate with the decisions of the authorities, the teachers, the school leaders, and parents. Some medical reports have stated that the world, especially in the northern part, may witness a second peak of the pandemic, some countries expected the closure of schools and universities again. It depends on the conditions of each country and the infrastructure of the schools. In this regard, some families who have financial capabilities may not agree to return their children to schools and tend to complete distance education programs and provide some of the abilities necessary for learning at home.

It is necessary to pay attention to diminish the learning gaps that widened during the lockdown, as well as making up for a lost time, saving the future of humanity, and providing Psycho-social support for our generations. It is necessary to reduce the costs of distance learning and to provide all tools and Internet facilities to be more equitable and justice for all [7-9].

The distance education system requires the following: Providing the appropriate digital technology, improving the speed of Internet connections, Training teachers in the field of computer skills, preparing the content of the study programs. During the pandemic, home learning will continue, and the school will be without walls. The large gap in quality education in developing countries will affect peace and global social security. We must take this opportunity in the long term to rebuild a new education system for a new world.

In this report, we explore and discuss the following: a) the Egyptian education reform project including its implementation and the assessment, b) the future vision of higher education development, c) Research excellence and capacity building, d) Skills and knowledge developments.

II. EDUCATION IN AFRICA DURING COVID-19

The African nations closed their schools and universities to avoid the people's infection of the covid-19. These closures might extend to the 2020/20121 academic year. Developing countries such as Burundi, Eritrea, Madagascar, and Mozambique are suffering from the lack of advancing distance learning technology, inadequate infrastructure, and weak (or absent) Internet network connections. Children are getting lost in education, and the situation is worse. While in the emerged economy countries such as Egypt, Kenya, and South Africa, information technology providing the platform for better facilities used in the distance learning system. There is no doubt that due to the pandemic, the governments have taken the decisions to improve and complete the infrastructure of digital systems and Internet networks. It will facilitate the development of their long-overdue education systems [11-21].

On the other hand, many African countries are still grappling with tribal wars and instability. They do not have the resources to bridge the educational gap of the weak and fragile system. Long-term school closures cause children to drop out of school and enter the labour market at an early age. They are abused and suffer from sexual harassment, exploitation in the illegal trade of human organs, recruitment into wars, and carrying out terrorist acts.

Aid and grants are essential to establish a new learning system based on acoustics, reading, and visual platforms. At present, the challenges to learning online and the use of digital education are due to the high cost, and lack of technical support. Moreover, people are suffering from an increase in illiteracy, and parents cannot help their children and support their studies at home.

In this context, cooperation between African countries enriched to benefit from the exchange of the available experiences of the Ministries of Education and Communications to support the learning process, raise the efficiency of digital content, create a public Internet network, and facilitate participation in the use of smartphones. It is a common idea to support the press to produce educational materials and to present some recorded tapes of lessons offered by schools. The continuation of the educational process in Africa requires a

comprehensive treatment for the learning loss that students suffered due to school closures. For this reason, it necessary to increase the education budget, introducing simplified curricula, supporting teachers and administrators.

The outbreak of the Corona pandemic in these countries has led to an economic catastrophe that affected the lives of people, spreading famine, poverty, preventing the health treatment to citizens. Moreover, in the coming years, we expect the reduction of foreign aid, which will delay the start towards saving the rest of the education system. In this case, we need solidarity between the public and private sectors to extend social protection in developing countries and to bridge the educational gap. We believe that, after the pandemic, many states have opportunities to restructure their education systems. In this regard, a strategy must develop the capability determination of educational policies through social consensus, cost reduction, and priority setting [22-23].

III. EDUCATION IN EGYPT BEFORE COVID-19

The closure of schools and universities has disrupted education and affected students around the world. In this crisis, one asks, what will be the future of education after the elimination of the pandemic? It seems that the end will see technology further introduced as a necessary component of education. It will happen in the best interests of both the education system and the entire society. In the following sections, we present three topics:

- Outline of the Egyptian education reform project as submitted by the Minister of Education to the World Bank for funding [24].
- Challenges for implementing educational technology in Egypt during the pandemic crisis,
- Project assessment

III-1) Outline of the Egyptian education reform project

In February 2018, the Egyptian minister of education presented an ambitious project to develop and reform the education system at all educational levels, by utilising modern [Egypt vision 2030]. Five hundred million United States dollars have financed this project through the loan obtained from the World Bank. The project objectives were to expand access to quality kindergarten, increasing enrollment with focus on poor districts, and implementing digital technology in education.

Its goals aimed to hire new teachers, school leaders, providing digital skills training, and improving the electronic technical support including iPad, laptops, as well as developing a reliable and fair electronic evaluation and assessment methods. The project plan depended on the performance in its various stages. Each stage has funded according to the measured outcome. This approach contributes to overcoming the deficiencies and failure of previous reform plans of public education. In the beginning, general indicators have developed in cooperation with the World Bank to motivate teachers to acquire new learning skills. Collaboration with external partners (such as a third party) was essential to ensure the implementation of tasks and the development of the Curricula's content of study programs at all levels of education.

III-2) The objectives of this project are the following [24-31]:
- Paying attention to educating children,
- Develop the quality of technical and vocational educations,
- Improve the quality of teacher and school leaders,
- Expand education leaders and supervisors program,
- Supporting a self-study program for secondary school students,
- Restructuring the national testing and examination centre,
- Enabling environment and platform digital learning resources,
- Develop educational management activities, including communications, monitoring, and evaluation.

In its first phase, the project aimed the following:
- Enrolling half a million children in kindergarten,
- Increasing the enrollment of low-income families,
- Training teachers and administrators to raise the quality of the educational process.

According to the education management information system (EMIS) data, digital learning resources have introduced in many schools. This information used to improve decision-making and policy-setting at the administration of all levels of the education sector.

III-3) Challenges for Implementing Educational Technology in Egypt

In the following section, we will discuss the applicability of the new approach toward the implementation of digital technology in all education levels.

Nowadays, it is well known that many exciting applications of digital technology are available in schools. These tools facilitate the improvement of the electronic learning support approach. Educational development requires providing innovative solutions in the fundamental pillars of the curriculum, teaching methods, pedagogy, evaluation processes, and educational administration. It restructures the financial resources and budgeting system. The success of the reform process requires the necessity of full use of computers and information technology to enhance school performance and educational quality outcomes. The challenges facing schools are the high costs of establishing infrastructure, maintenance, and training in acquiring digital cognitive skills.

In this regard, six questions have arisen [32-33]:

11. How can schools and students procure the financial resources to purchase computers and to obtain digital educational materials?
12. How can students quickly access the Internet and benefit from the available educational materials?
13. How can schools afford enough computers and telecommunications to sustain the distance learning models?
14. How can encourage and motivate teachers to deal with the distance learning system and learning digital technology methods via the Internet?
15. How do we prove to the community the reliability of the distance learning system via the Internet compared to the traditional education system?
16. Where will educators find the funds for equipment, software, technical staff, ongoing telecommunications services, professional development—the myriad of costs associated with a sophisticated information infrastructure?

To assist public schools, the government allocated funds to complete the necessary infrastructure for digital technology and to use it in teaching and learning. Teachers and administrators must work to raise their efficiency and skills to use digital education models effectively. One should concern about this massive investment to provide computers and access to the Internet to every student. This investment depends on the establishment of the infrastructure, digital training, and the availability of financial resources [34]. According to the more detailed cost model (McKinsey & Company, 1995) [35], it takes an initial budget of $ 20 billion to provide a computer for every two or three students in all schools. These computers connected to the Internet. Also, we need another one billion dollars per year for running costs, a financial commitment that would drain Schools from all discretionary funding for a period of at least one or two decades. It is worth noting that the infrastructure and educational facilities are outdated and require renovation and reconstruction. The process of self-learning requires simplifying and changing the course syllabi to allow intellectual depth and benefit from the database and information that is available on Internet platforms. Professional development needs are more complex than increasing educators' technical literacy (e.g. training in how to use web browsers). The issue to build skills capacity in teaching requires the provision of considerable financial resources in addition to allocations related to the purchase of devices. Moreover, the digital transformation in schools and universities requires exorbitant financial budgets, the availability of high expertise in computer and communication sciences, and technical skills to support the operations, maintenance, and renovation.

Accordingly, the digital transformation in Egypt is slowing down due to the lack of adequate financial resources in schools, which affects the quality of learning outcomes and threatens the lives of millions of students. In this regard, some argue the futility of pumping considerable investments to keep pace with virtual education in schools, which opens the back doors for the beneficiaries without restrictions or accountability. With the outbreak of Covid-19 and the closure of schools, there was not enough time to prepare and master the digital transformation process. The application and implementation of the distance learning system require the development of systematic educational plans to qualify teachers and students to accept this system. Teachers and students are only interested in completing courses to meet the final test-taking criteria.

The distance learning system requires students to have laptops and wireless networks, and also to provide sufficient time for self-learning without any assistance from the teacher. Therefore, the government must develop a plan and provide financial allocations for the purchase, maintenance and development of computers and telecommunications. In the past, this money has mainly come from particular external sources: grants, community donations, bond initiatives.

First, schools found that the benefit from publications, textbooks, and other educational materials is decreasing despite the high financial cost. It is in contrast to what the Internet provides in terms of the ability to download all information, collect data and textbooks with accuracy, efficiency, and at an incidental commercial cost.

Second, in a traditional educational system, students obtain from the teacher all the required knowledge and information. This information flows into their minds, where it kept long enough to take the test, and then is forgotten after that. Generally, the number of students per class is between 25 to 40 students, the lessons are short only for 45 minutes, and the students have a limited time for practical activities.

Notably, the salary structure is similar for all teachers. It does not consider various skills and abilities. Therefore, we see the resort of those teachers to personal work and the appearance of what is called the "private lessons" phenomenon. To achieve widespread shifts in standard educational practices, teachers must change their pedagogical curricula; also, school management and the institutional structure must change the relationship with society in radical ways. In this regard, students commit themselves when they have the opportunity to learn by doing, as students gain enthusiasm and determination in completing the cooperative building of knowledge, through the diversity of different teaching methods.

Usually, in developing countries, the relationship between teachers and their community is not considered a partnership. Those teachers, school leaders, and administrators often feel isolated and forced to perform their difficult tasks with insufficient resources. Few organisations are willing to take educational innovations "on faith". Many people question whether traditional education and testing systems develop and evaluate the kinds of knowledge and skill their children need for their future. However, most parents feel that the current system works in their favour and do not want to replace something radically different unless the superiority of the new methods demonstrated.

III-4) The need of the Egyptian society in the 21st century

In Egypt, there is a need to carry on research on the new technology-based pedagogical strategies, which is introduced by the Minister of Education. The objective is to assess the improvements in educational outcomes. At least four kinds of progress are needed to measure which are: Increasing learner motivation, learner attendance, studying concentration, and the spending time per task. The digital technology provides the tools to support the students not only to learn these difficult concepts but also to master the learning about how to gain skills needed to keep their capabilities current in a rapidly evolving economy. In this approach, students are behaving as do teams of scientists, mathematicians, designers, or other kinds of expert problem solvers. The digital environment reflects various student activities such as developing the analytical, interpretive, creative, and expressive capabilities of information tools. It has a significant impact on the parents as they watch their children creating, innovating, and developing their skills, as well as obtaining better outcomes on standardised tests. The most challenging type of evidence to provide for the superiority of the distance learning system concerns the score evaluation on conventional achievement [36].

Standardised tests designed to assess only a narrow range of knowledge, and the other three types of improvements just discussed fall mainly outside the scope of what they measure. Assessment based on multiple-choice tests, without bogging educators down is a complicated, time-consuming, and potentially unreliable performance evaluation. The students' outcomes on conventional achievement tests rise when distance learning via the Internet can implement. Teachers need adaptation to this system. Through the online learning approaches that build trust between the schools and society, communities have ample opportunities to observe the types of evidence for further enhancement of the students' educational outcomes. The implantation of educational technology will increase equity rather than widen current gaps between "haves" and "have-nots. Implementation within a broader context of systemic reform, emerging information technologies will enhance the learning outcomes.

Currently, after the outbreak of Covid-19 pandemic, most developed and developing countries have tended to benefit from distance learning programs and work to reduce the gap resulting from the development of digital technology and computers. In this regard, efforts are making to eradicate digital literacy for students and teachers and help governmental schools that are poor and whose students are at risk of dropping out. While the right place to begin, this approach to educational equity is inadequate unless taken beyond access and literacy to address issues of content and services.

The request for the types of help and educational materials online must fulfil the needs of students and teachers and the interest of non-performing, and at-risk students increased. However, our goal should be to measures only a fraction of what students need to know for their future prosperity and incorporate a diluted definition of educational quality negotiated across many countries with very different populations and national goals. Instead, we demand the importance of developing new educational systems based on the creation of knowledge and innovation. One can imagine what students will get in high school compared to undergraduate students at present.

III-5) Project assessment

Based on the discussion mentioned above; we present some critical remarks on the use of education technology in the Egyptian education system. Schools faced various challenges to using digital tools such as iPads, and laptops efficiently due to the lack of training to both the students and the teachers. Also, the book contents are merely replaced by the computer screen, in principle nothing change in the curriculum. The priority should focus on modernising and developing the intellectual, philosophical, scientific presuppositions of education in Egypt, including the infrastructure that governs learning itself.

To preserve public health and not spread the epidemic, schools, sports, and cultural clubs, tourist places, as well as airports and places of worship were closed. While the Egyptian government aims to protect the lives of its citizens, but at the same time, it is discussing ways to combat the spread of the virus, and to avoid a state of economic paralysis. Many countries have launched online learning platforms to overcome this emergent crisis and to continue the study programs. Unfortunately, the Ministry did not inform the school leaders and teachers of the decision to close schools until two weeks before the announcement of cases of virus infection among the citizens. This action caused a state of panic for everyone and how to prepare for this emergency. Those teachers led the way in what is likely to be the most considerable online educational experience this country has seen. Teachers across the country are struggling to teach students who are stuck at home. They lack the training to teach their curriculum online. The situation is not exact so far, while the government had already developed an electronic system for all students across all educational levels. In Egypt, this can be an opportunity to correct the implementation of digital technology.

IV. HIGHER EDUCATION REFORM IN EGYPT

Since the beginning of the 20th century, the establishment of Egyptian universities represents a great success story. Egypt established 27 of regional state universities and 120 of higher institutions. During the 1990s, the government allowed the private sector to participate in the establishment of some universities and higher institutions to provide educational services following the requirement of the labour market. At present, there are 25 private and several nongovernmental universities (as NGO) that contribute to the higher education system in Egypt [37]. It is worth mentioning that the population aged 18-30 in Egypt is about 40% of the total population, placing a burden on the higher education system in terms of quality and equity. Many of the developing countries are experiencing this problem, which needs to be combined to develop a strategy to reform the higher education system to ensure a better life for those young people.

Today the world is already changing faster than ever, and it would be a mistake not to look forward to the future of higher education in Egypt. The future success depends on mobilising more effort to develop creativity, skills and talent for all people to build a strong economy and social harmony. In this regard, Egyptian universities are facing the following challenges:

1. The expansion of higher education has not extended to cover the most talented and the best of all academic fields.
2. Harnessing knowledge to create wealth requires giving universities the academic freedoms and resources needed to compete with global efforts.

The system does not provide fairer support of free education and access, and it is not reasonable for the country to continue to pay for the student's access to a university degree and not to ask wealthy students to contribute to the costs of their education. It is necessary to put in place objective mechanisms to support students in need to complete their education at universities so that the government can recover these benefits through real human development investments in society. It is essential to make tough decisions in higher education, to deal with a long-term funding student, to open the way for him (or her) to get to university, and to allow him to compete with the best

For the future of generations, it is necessary to achieve a partnership between government, companies universities, and students to renew and expand services for a comprehensive higher education system. We hope that these proposals will contribute to strengthening this partnership. It is the basis for success in securing a better position for the future of higher education in Egypt. Higher education has excellent benefits for both the nation and the citizen. It is acquiring skills and developing creativity as the key factors in creating decent jobs that promote social justice through better work and earning more than those who have not been able to continue education.

To overcome the challenges that hindered the development process in the higher education system, we must face difficult choices in quality management and financing. The expansion of higher education will meet the increasing needs of skilled labour and bridge the social gap that requires access to universities and higher institutes. Also, focusing on the importance of investment in this field will strengthen relations between universities, the business sector and the economy. Addressing these challenges requires a long-term strategy for investment and reform, as well as creating funding for higher education and increasing opportunities to empower universities to address many of the growing problems. The painful situation in the Egyptian state universities requires taking the difficult decisions, the risks leading to further deterioration that students and the nation as a whole will suffer unless we can achieve the following:

1. Improving the infrastructure of universities, higher institutions and research centres,
2. Developing study programs in line with the scientific and technological progress in the world,
3. Improving teaching methods and developing human resources in universities,
4. Significant additions to research funding and knowledge transfer, promotion of excellence and participation in supporting the region's economies;

5. Empowering more people to enter higher education, and benefiting all individuals in society, as the economy needs higher skills;
6. Providing scholarships to support the disadvantaged classes,
7. Strengthening the cooperation between all disciplines for research excellence,
8. Developing a new salary structure for the faculty member, researchers, and administrators,
9. Providing health and social care to all those involved in the field of higher education
10. Promoting effective teaching and learning for better quality education,

The gap between social strata in accessing higher education remains unacceptably wide. It is necessary to reduce this gap by fulfilling the following:

*   Restoring the grant system for students from low-income families,
*   Appointing an independent oversight body to oversee to ensure students acceptance with fair, professional and transparent procedures,
*   Expanding the national cultural programmes to build better links between schools, colleges and universities.

IV-1) Higher Education in Egypt: Issues and Solutions

Higher education is one of the significant patriotic tributaries. In this way, citizens can educate to deal with the era of knowledge. We are proud of having a Ministry of Higher Education and Scientific Research in Egypt. However, we do not accept that the strategic plans do not reflect popular demands for a minimum of quality education opportunities. For example, during the past decades, in a dramatic shift, we see the reluctance of the broad base of higher education and scientific research in universities and higher institutions to participate in the development processes that put forward. The lack of coordination between the leadership and the broad base of the faculty members has led to a rapid deterioration in quality, especially with the low level of funding and the failure to address development and reform issues firmly [38-47].

There is no doubt that universities contribute significantly to strengthening the national economy. The research in the field of higher education represents the real strength of development. The absence of political will and the adoption of a clear policy to encourage and develop researchers to achieve the goals of the industrial and technological renaissance has made scientific research random and not a reflection of complementary visions, and it only uses for promotion purposes. Most of the students are dissatisfied with the level of teaching and learning in universities and higher institutions. Also, the educational programs are outdated, and the teachers cannot provide data and statistics in any discipline about the rapid progress in the educational process, especially with the development of the internationalisation of education, and freedom of mobility to achieve the goals of the global labour market. The lack of full-time faculty memberships, attention to student affairs, and academic outreach have widened the gap and misunderstanding between students and teachers.

The lack of a link between education outcomes and the business sector has led young people to become voluntary immigrants and to seek other areas of work that are not in their respective fields that do not meet their aspirations or to illegal immigration outside the country. In both cases, this represents a waste of effort and money and a loss of Egypt's wealth of energetic young generation. With the low level of higher education, young people have resorted to creating other windows for learning through foreign schooling, which has been spread under the name of private education or through websites that usually have educational objectives that differ in their identity from the Egyptian culture.

It is worth noted that from the outset, the higher education sector had embraced research, knowledge transfer, local & regional economic and social development. There is widespread consensus within the Ministry of Higher Education that all these elements are both welcome and necessary. However, it is unreasonable to expect all institutions of higher education to maintain all these activities simultaneously and to be globally oriented, have no plans at the national level and do not have levels of excellence. Instead, it has only some scarce resources to produce scientific research and usually focuses on individual work.

There is no diversity within educational institutions, and past and current Governments do not accept to be partly responsible for the failure to have an honest recognition of the roles of different universities. For example, institutions need to drive to more in the way of participating in incentive research in funding mechanisms and through new standards. Still, the government favours being the prominent financier of higher education. However, we need to move to a new funding system that allows each institution to choose its mission and sources of funding to support its educational process and scientific research.

The severe challenges that threaten the danger of this educational stage call for concerted efforts and the development of an emergency plan to save higher education. It is necessary to expanding the circle of dialogue and participation to preserve the infrastructure for education and scientific research, develop teaching skills and qualitative training, and attract those with expertise in improvements and sustainability.

IV-2) The future vision of Higher Education

We cannot escape the challenge of these crucial issues. Higher education is essential. We are taking the first steps towards a new vision of higher education. We must seize this opportunity to lay the foundations for reforms that will transform the future of this sector for better development. The contours of Egypt's future vision of higher education are as follows:

1. The government must ensure that the transition to the future managed carefully and reasonably so that it is not changed and destabilised,
2. Supporting the Educational institutions to move towards new freedoms, to develop new patterns of autonomy, and the government must also retain a role because it is the only one that can balance competing interests among different stakeholders. It will also have the responsibility to intervene when universities fail to provide adequate opportunities or when quality standards are reached and became at risk.
3. We believed that the higher education sector must meet the needs of the economy in terms of people training, research and technology transfer.
4. Developing a legal framework to define university values, adopt innovators and create & apply knowledge for the benefit of all;
5. Identifying the role of universities in educating students to live life to the fullest, by acquiring skills, promoting meditation, imagination and creativity, and contributing to community building;
6. We believe that all higher education institutions are mandated to identify strengths and excellence in teaching and reach low participation groups. Exact plans for scientific research and knowledge transfer should be established and linked to the development of the local and regional economy while providing real opportunities for students to progress.i
7. Building strong and meaningful cooperative relationships between institutions to support better the educational process, research management and knowledge transfer;
8. Nurturing and encouraging student talent in various fields of sports, and culture of society,
9. Developing new methods of study and offer courses that meet the needs of students;
10. Giving higher education the opportunity for all those who can benefit from it;
11. Identifying the number sought by qualified staff and administrators and with sufficient numbers to achieve the required tasks,
12. Strengthening the management of educational institutions and the wise of leadership, which will have to achieve the objectives of the institution and improve the quality education to all study and training programs and implement the precision plans,
13. Diversifying sources of funding to support the institutions and establishing a partnership for investment in higher education.

V. RESEARCH EXCELLENCE AND CAPACITY BUILDING

Scientific research is laying the long-term foundations for innovation, which is essential for improving growth, productivity and quality of life. It applies not only to medical, scientific, technological and engineering knowledge, but also to the fields of social sciences, humanities, the arts and law, and can identify economic paths, for example in tourism, antiquities, etc. Universities can also use international scientific research to provide expertise to keep pace with the latest developments and join international partnerships in which competition is usually very fierce. Many countries have used generous spending to fund their scientific research, and we need to think about how to organise and support scientific research at universities and research centres. Here are some of the stages of reform:

- Determining the rates of expenditure on scientific research in real terms in previous years and for all institutions and research centres.
- Introducing new ways and ideas for financing that depend on the formation of scientific unions and the development of standards for collaborative work and the management of research units.
- Identifying the most active research centres and work to link them to international research projects in advanced universities.
- Strengthening modern and new research and creating a scientific environment for young researchers.
- Achieving quality and increasing the productivity of scientific research in universities,
- Increasing investment to achieve excellence in scientific research and a prestigious position for our universities.
- Organising and identifying areas of scientific research,
- The formation of scientific councils in various disciplines to include funding and the selection and quality research
- Increasing investment in innovation development,

- Developing a system to finance scientific research and its continuation and build infrastructure and maintenance,
- Increasing funding rates through the country's steady annual growth,
- Encouraging emerging research fields such as new smart materials, nanosciences, medical and applied sciences, etc.,
- Taking real steps to improve wages and continuous training for researchers,
- Promoting essential science education physics, mathematics and chemistry in schools and universities,
- Studying the optimal use of funding for research projects
- Preparing an academic structure to manage scientific research affairs in colleges and universities.
- Achieving justice in the distribution of the budget for funding scientific research in universities and research centres,
- Setting quality standards following the global system and determining the scientific standards and achievements required.
- Developing a real evaluation system away from courtesy.
- To consider the relationship between the faculty functions of universities and to carry out teaching and research tasks,
- Focusing government resources on funding the most effective and efficient scientific research and provide incentives for researchers to collaborate with universities and research institutions.
- Encouraging graduates from universities to engage in scientific research and grant all facilities and benefits and provide the necessary scientific supplies, equipment for research projects, with the introduction of a system of grants for distinguished researchers, to ensure the continued communication between generations and the completion of national scientific schools.
- Sharing experiences to manage intellectual property and make the most of patents,
- Encourage the establishment of graduate colleges to oversee qualitative training and conduct innovative research.
- Forming strong groups of researchers among universities, government laboratories, research centres and units funded by NGO's,
- Strengthening national scientific schools with talented researchers at the global level and working to bring them in to participate while providing them with all the material and social care.
- Among the reasons for not obtaining resources of funding from financiers of people in business and interested companies are the poor infrastructure of universities and the obsolescence of equipment and other scientific devices that cannot meet their obligations towards achieving the quality of scientific research.

VI. SKILLS AND KNOWLEDGE DEVELOPMENTS

In a knowledge-based economy, competitiveness and quality improvement in lifestyle depend on the exchange of knowledge between higher education institutions and the business sector. It results in response to low skill levels that hinder national productivity. The lack of visions to improve these links will affect the performance of educational institutions and their role in contributing to the country's development plans. Therefore, a higher education development strategy must include the following proposals:

1. Promoting a partnership between higher education institutions, business and other sectors charged with fostering economic development.
2. Developing additional funding to support the innovation development fund
3. Establishing a knowledge-sharing network to enhance the critical role of institutions, conduct intensive research and transfer the technology, knowledge and skills needed for development.
4. Involving employers in the development of the educational process
5. Strengthen the links between the communities, research institutions and industry.
6. Participation of higher education institutions in collaboration with existing companies. The creation of new partnerships and the application of the latest technological applications.
7. Establishing the higher education fund for innovation to promote knowledge transfer through cooperation between colleges, scientific departments and organisations working in the field of skills development.
8. Focusing on acquired technology that works mainly with local companies through consulting rather than licensing to import new technology.
9. Enabling the organisations to acquire and utilise a range of leading technologies by creating innovative solutions to real problems and meeting needs, as well as achieving breakthroughs in science and technology. It needs a link to the industry, which is "practice communities" as part of daily education and research.

10. Encouraging access to small and medium-sized enterprises and support projects for their development.
11. Higher education institutions must work together with business people to support skills and provide technology and knowledge
12. Building and renewing the capacity of local communities depend mainly on the company's contract with commercial and economic enterprises.
13. One of the most important outcomes of this cooperation is to establish what is called the "business complex" and develop a flexible financial plan to develop specific technological projects and increase spending on knowledge transfer and innovation.
14. Promoting the partnership and monitoring the supply for higher education to meet the priorities and wishes of the citizens.
15. Encouraging and financing the establishment of new technical institutions that will play a vital role in the development of the business complex.
16. One of the essential advantages of the interconnection between higher education institutions and the business sector is to develop the necessary skills and transfer knowledge in the workplace, as well as to stimulate the development of useful knowledge.
17. Establishing close relationships between the industrial sectors and educational institutions works to equip the new workforce with the necessary skills to enhance quality and increase production.
18. This partnership will support the development of educational institutions' study programs, with a strategy for developing vocational training programs in the industry.
19. In addition to the critical role of universities in providing skilled graduates to the business sector, they must involve in the development of the country's workforce by supporting medical education, teacher training and other public services.

VII. OPPORTUNITIES FOR EXCELLENCE

Teaching and learning are fundamental goals of higher education. We are committed to making higher education institutions the best place to teach, provide quality learning and take all safeguards so that the educational process conducted with high standards and continuous improvement. It is necessary to provide students with the best possible information to help them make the right choices about what to study and how they are entitled to know that their success adequately rewarded. In this regard, one should consider the following:

1. Reviewing the sources of funding so that new resources come to the sector, not only through research and student numbers but through strength and excellence in teaching.
2. Increasing the work to raise quality. A comprehensive survey of students' opinions carried out, as well as the publication of external examiners' reports and other information on teaching levels, along with an easy-to-use guide for universities, overseen by student unions.
3. Supporting reform and improving the quality of education in all institutions with additional funds, and be conditional on higher education institutions developing strategies for the development of human resources, especially faculty members, rewarding and encouraging good teachers.
4. Developing new national standards for vocational and technological education in higher education as the basis for accredited training for all staff, and all new faculty members,
5. Strengthening the system of review and guidance by faculty members,
6. Providing the information necessary for students to make the right decisions, especially when choosing accurate disciplines and identifying the needs of the labour market.
7. Drawing up lists of the student training programs and publishing information on their quality arrangements.
8. Developing modern mechanisms to measure student achievement to enable teachers to understand and reflect on their accomplishments.
9. Changing the policy of admission to universities and higher institutes has become imperative so that students applying for admission can obtain all institutional and academic information and the quality of educational programs, teaching methods and the needs of the labour market clearly and transparently.
10. Colleges and scientific departments should publish all academic information, the most significant achievements and obstacles in completing the educational process. Discussion and exhibitions organised to discuss scientific accomplishments and community services provided by colleges and universities.
11. The formation of an arbitration committee of professors will help to receive complaints submitted by students related to the issues of education, learning, level of achievement and training. The committee deals with the problems of education and student affairs, within the framework of the quality of education.

12. Professional standards should be agreed upon for faculty members to perform specialised teaching tasks efficiently.
13. All faculty members must be involved to ensure continued professional development and to update their skills.
14. Developing a new financial staff for faculty to allow the awarding of financial rewards to these outstanding people in providing the best educational methods and the ability to improve in support of teaching and learning continuously.
15. For academic practices to be excellent and world-class, all educational institutions need to develop their strategies and recruitment and training systems, as well as management performance, career development and teaching value, reward and encouraging teachers.

VIII. CONCLUSION

In conclusion, the educational technology-based systemic reform in Egypt, as presented by the Minister of Education, is challenging in part because the ways of thinking about implementation are often flawed. The reforming of the education system in Egypt will not be easy. It is possible if we transcend the implicit assumptions about the concepts of learning, digital technology, equality, and community development. Education has been one of the least interrupted fields during the ongoing coronavirus crisis. Despite the controversy surrounding the e-learning system, and the lack of preparation under the pressure of emergency circumstances, schools and universities have tended to accept this new system to continue the educational process. Some teachers believe that online learning in education is a guarantee of student understanding. However, students generally cannot correctly understand what they taught in the absence of creative teachers. Employing a comprehensive technology strategy can help us to do so while not going beyond our limited resources.

Under the current circumstances in Egypt, the need to expand the fields of higher education has become imperative to achieve economic development goals. But quality should not compromise, and it must ensure that the courses and study styles genuinely serve the needs of the economy and fulfilling the demands of the students themselves. This expansion should pursue by introducing new study programs and specialisations in the fields of scientific and technological development. In this regard, we have the following remarks:

1. Identifying national economic priorities to strengthen the objectives of increasing the participation of higher education institutions in the areas of development.
2. Guiding young people to new disciplines, especially in the field of vocational and technological education.
3. The bulk of the expansion will come through new types and styles of qualifications that specifically designed to meet the needs of students and the economy.
4. Supporting employers by focusing on the skills they need, as well as encouraging students to take these disciplines by offering them financial incentives while simplifying funding systems for tuition burdens.
5. Marketing high-value services require high skill, to increase diversity in the areas of higher education.
6. The government must support strategic plans and ensure that the education and training system responds effectively to the needs of the labour market and the necessary skills of the workforce.
7. There is no doubt that higher education is the most crucial stage for economic growth in developed countries and that this education increases the rates of such development by stimulating greater effective use of resources and more investment.
8. Expansion in the areas of higher education does not mean more, posing a threat to the future of higher education, which becomes a single form of tradition.
9. To increase financial resources and higher education allocations, educational programs and institutions must expand, and students recruits from all over the world.

Finally, education must be a force for social justice and opportunity, not to establish the privilege of one popular class without another. There is no doubt in the past that all institutions of higher education and scientific research suffer from weak government spending. For reform to be successful, these institutions must be entirely independent of the central administration of government. It is, therefore, up to them to assume all responsibilities towards achieving strategic objectives, supporting their financial and administrative affairs and freedom from excessive bureaucracy. It should be left free to move towards achieving quality goals, knowledge transfer and exchange of experiences with international institutions. Leadership and management are the keys to meeting the challenges ahead. The improvement requires the reduction of the bureaucracy and burdens on universities. Also, increasing university endowments represents the real way to increase long-term funding opportunities. Moreover, the selection of university leaders expert in managing affairs facilitate the development and the reform of its infrastructure and management. also it contributes to the development of regulations and laws that serve all employees.

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