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Assessing The Implementation of Egypt's Education 2.0 Reform: The Case of Sohag

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ASSESSING THE IMPLEMENTATION OF EGYPT'S EDUCATION 2.0 REFORM: THE CASE OF SOHAG

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Spring 23

Table of Contents

List of Tables

List of Figures

List of Acronyms

CCIMD	Center for Curriculum and Instructional Materials Department
CAPMAS	Central Agency for Public Mobilization and Statistics
DSA	Direct School Admission
EDU 1.0	Education 1.0
EDU 2.0	Education 2.0
EKB	Egyptian Knowledge Bank
GDP	Gross Domestic Product
ICT	Information, Communication, and Technology
K-12	Kindergarten stage to grade 12
KPIs	Key Performance Indicators
MOETE	Ministry of Education and Technical Education
MOE	Ministry of Education
MENA	Middle East and North Africa
M&E	Monitoring and Evaluation
MPED	Ministry of Planning and Economic Development
MCIT	Ministry of Communication and Information Technology
OECD	Organization for Economic Cooperation and Development
PD	Professional Development
RDP	Research and Documentation Project
SEED	Strategies for Effective Engagement and Development
SSMASE	Strengthening of Science and Mathematics in Secondary Education

SDG	Sustainable Development Goal
TOT	Training of Trainers
TSLN	Thinking Schools, Learning Nation
UNSDGs	United Nations Sustainable Development Goals

Acknowledgment

I am a product of the public education system who was offered a chance to receive prestigious educational opportunities and lifetime experiences. My passion for education was initiated through my desire to help my fellows who were enrolled in public education. I believe we all deserve the chances that I received, and I took it upon myself to try to change that. As a result, I would like to extend my sincere gratitude to all my American University in Cairo's professors and my esteemed readers, Dr. Rana Hendy and Dr. Shahjahan Bhuiyan. In addition, I want to thank the generous Youssef Jameel Leadership Fellowship for supporting me through my journey. I would also like to thank Amira El Biltagy, Jameel Program Manager, for her utmost support in every milestone during my master's study and creating a safe haven for all of Jameel fellows. A special thank you to Dr. Laila ElBaradei, being my thesis supervisor and leading Jameel fellowship, I truly cannot find enough words to express my appreciation and gratitude for the support and understanding she has provided to me and to everyone who asks for help.

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I hope this piece of work would be the voice of the good welcoming people I have met in Sohag during my fieldwork and that it would drive some change in the quality of education they receive.

Abstract

Education is a key component contributing to a country's socioeconomic status. Accordingly, countries that seek better economic development focus on the quality of education. Egypt realized that and started a series of educational reforms, none of which delivered the desired objectives. Regrettably, this was clear in Egyptian students' poor performance on international tests in the years 2013/2014 and 2014/2015 (World Economic Forum 2013; 2014). In 2018, the Egyptian Ministry of Education announced the launch of Education 2.0 (EDU 2.0) reform which adopted transformative, multidisciplinary, student-centered educational pedagogies to enhance the quality of education. This study presents the results of an evaluation of Education 2.0 reform's influence on the quality of education in Sohag's primary schools (grades 1-5), one of Upper Egypt's governorates. Sohag ranks as the second poorest governorate in Egypt, with low government expenditure, which would impose more critical challenges during the implementation of EDU 2.0 innovative reform. The main research question is: To what extent was the implementation of Education 2.0 reform effective in Sohag? A qualitative methodology was utilized that depended on collecting data from three main stakeholder groups: Sohag public and private school teachers, educational advisors who were involved in the design and implementation of Education 2.0 reform, as well as parents in Sohag. A total of twenty-nine participants were involved through in-depth interviews and focus groups, and the interviewing stopped when no further insights were being derived from the interviews. The evaluation process managed to identify the main challenges as perceived by the Ministry of Education and Technical Education (MOETE) during the design and implementation of the reform, for instance, the resistance of parents and the robust parallel economy of private tutoring. Besides, the study recognized several difficulties faced by teachers and parents in Sohag during the execution phase, such as insufficient resources and inappropriate professional development training timings. Moreover, the analysis pointed out the reform's perceived positive aspects alongside major concerns that might impact its effectiveness in Sohag. Generally, the teachers were satisfied with the innovative educational pedagogies and student-centered approaches and were delighted with the change in their students' performance. However, some of the identified major concerns were the teachers' insufficient support from the Ministry of Education and Technical Education (MOETE), the ineffective professional development training, and parents' dissatisfaction with EDU 2.0 reform; the latter factor threatening to be a possible cause for disruptive decisions by parents and their choice to withdraw their children from EDU 2.0 schools. Finally, the study came up with a number of recommendations based on past successful reforms executed in other international education reform experiences, and these were tailored to the Egyptian context, such as reinforcing teachers' communities of practice and enhancing parents' involvement through door-to-door campaigns.

Keywords: education, public administration, Education 2.0, MOETE, public schools, Sohag, parents, teachers, MOETE.

Chapter One: Introduction

1. Introduction

1.1. Education and its Reforms

Education is a multifaceted component that contributes to a nation's economic development and influences its strategic goals. It is a critical factor reflecting governments' investment in human capital and contributing to its welfare. UNDP disagreed with defining poverty as equitable to low income but rather associated poverty with the lack of prospects to lead a better life (Thapa, 2015). Thapa (2015) elaborated that poverty restrained people from investing in education; consequently, fewer opportunities are available to them with less income, leading to poverty exacerbation. Nevertheless, education affects individuals' economic status and their fate concerning staying under the poverty line, which is reflected in the nation's future and its economic performance among other countries.

Several countries recognized the importance of education in reinforcing their economic growth, and as a result, they started designing a variety of interventions aiming to reform their educational systems. For instance, Kenya raised its public expenditure on education from 5.1% in 1980/1981 to 15% in 2008/2009 (Ojiambo, 2009). Kenya's investment is considered a significantly huge number compared to other African countries. Moreover, China embarked on numerous interventions to shift from a centralized educational system to a decentralized one where schools and teachers were held accountable for the students' education (Zhao and Qiu, 2012). The success of these educational reforms was not claimed yet; however, the interventions showed positive results, which showed these countries were on the right course to upgrade their education quality.

1.2. Problem Statement

According to the World Economic Forum (2013, 2014), although Egypt is the largest educational system in the Middle East, it ranked 148 out of 148 countries in its 2013/2014 global competitiveness report and 141 out of 144 countries in the 2014/2015 report. As a result, Egypt had the worst quality of education in 2014/15 among other countries. Youssef (2015) claimed that classrooms of sizes prepared for 25 students usually included 40 to 50 students. She also argued that the teachers received poor-quality training. Moreover, Abdelrahman and Irby (2016) stated that good quality education was one of the protesters' demands in the January 2011 revolution. They continued that the exam-based curriculum encouraged teachers to turn to private tutoring in order to enhance their financial status. Elzoughbi (2018) mentioned that Central Agency for Public Mobilization and Statistics (CAPMAS) reported that Egyptian families spent 42.1 percent of their annual expenditure on private tutoring, reflecting the poor education quality from their viewpoint. Furthermore, he claimed that the privatization of education promoted by Moubarak to reduce public spending contributed to the decline of public education. It is obvious that the Egyptian educational system suffered from poor quality, unqualified teachers, and poor infrastructure.

Consequently, several reforms attempted to raise the quality of Egyptian education in order to secure qualified calibers to the labor market and enhance Egypt’s ranking in the global tests. The United Nations Children's Fund (UNICEF) in 2014, mentioned that the reforms focused on the public K-12 system serving 80 percent of Egyptian students, while the other percentage of students were accommodated through the Azhari or the private system. For instance, the national education strategic plan (2007 - 2012) focused on several aspects, such as overhauling the curriculum, teachers’ professional development, technology infrastructure in schools, and schools’ infrastructure (OECD, 2015). However, Loveluck (2012) stated that the educational reform efforts

resulted in slight advancement. Consequently, education reform endeavors were not perceived as impactful.

In 2018, Dr. Tariq Shawki, the former minister of education (2017 – 2022), announced the launch of a transformational educational reform that is known as Education 2.0 (EDU 2.0) reform aligned with Egypt's vision 2030 and SDG4 that focuses on education and aims to "ensure inclusive and equitable quality education and promote lifelong learning opportunities for all" (United Nations, n.d.). Marey and Maged (2022) claimed that EDU 2.0 was a transformational reform adopting high international standards to revamp the deteriorating curriculum and upskill teachers' competencies. Moustafa et al. (2022) stated that EDU 2.0 adopted learner-centered educational pedagogies and a technology-enabled multidisciplinary curriculum. Furthermore, ElZayat (2022) pointed out that the implementation of EDU 2.0 was accelerated by the COVID-19 pandemic, where it was highly needed. She continued that launching a new version of the electronic resources' portal named the "Egyptian Knowledge Bank" was demanded to cater to the schools' lockdown. The new version included study materials for more grades that aligned with the technology component of EDU 2.0. The transformative EDU 2.0 was a disruptive move from the Ministry of Education and Technical Education (MOETE) and required meticulous planning and vigilant implementation to guarantee its success in such a diverse, challenging educational environment exhibited in the Egyptian community.

Meanwhile, Sohag is a governorate located in Upper Egypt, and according to CAPMAS (2019), Sohag recorded a 59.6% poverty rate during their 2017/2018 survey. The high poverty rate ranked Sohag as the second poorest governorate in Egypt after Assiut. El-Laithy and Armanious (2018) elaborated that two-thirds of Sohag governorate's population had poor socioeconomic status. Furthermore, Sohag possesses one of the highest enrollment rates for K-12 education in

Upper Egypt (Hosny et al., 2022). However, the high enrolment rate is primarily concentrated in the primary stage and declines in the preparatory and secondary stages. Accordingly, students are more likely to finish their primary education and have a high tendency to drop out in higher grades, which might be related to poor socioeconomic status or certain cultural attributions. Thus, the implementation of a disruptive educational reform such as EDU 2.0 in Sohag would be expected to be more challenging compared to its implementation in the Capital city or in more economically endowed governorates, a matter that will be further explored in this study.

A. Research Aim

This study aims at evaluating the implementation of Education 2.0 in Sohag governorate's public and private schools, teaching the national curriculum, and focusing on the primary stage. To achieve that goal, three main stakeholders were reached out to. The study strived to investigate the extent of influence EDU 2.0 had on parents and teachers in Sohag. It focused on determining the effectiveness of EDU 2.0 from teachers' perspectives and whether it affected their performance using the curriculum, new pedagogies, and teachers' Professional Development (PD). In addition, examining parents' perspectives provided a significant contribution to the fieldwork. Furthermore, inspecting whether MOETE acquired teachers' and parents' consensus during the design or implementation phases of EDU 2.0 reform was performed accordingly. Finally, educational advisors who were working with the MOETE during the first phases of the reform's design and execution were interviewed to gain their perspective on MOETE's plans and performance.

B. Research Questions

The main research question is: **To what extent was the implementation of Education 2.0**

reform effective in Sohag?

The research sub-questions focused on deeply investigating the influence of EDU 2.0 reforms on teachers and parents in Sohag from several perspectives. The research sub-questions are as follows:

- How was the teachers' and parents' buy-in acquired during the planning phase and upon implementation of the reform?
- What were the gaps between the policy and implementation regarding teachers' EDU 2.0 professional development? And how do teachers assess the change in their performance inside their classrooms and the effect on students' academic levels after the implementation of EDU 2.0?
- How do parents evaluate the education quality after the implementation of EDU 2.0 reform?
- What were MOETE's plan and efforts to mitigate the expected challenges facing EDU 2.0?

The researcher decided to interview three stakeholder groups in Sohag to achieve the research purpose using an in-depth qualitative methodology. These groups were Sohag parents, educational consultants, and Sohag public and private school teachers (primary stage) who were interviewed through semi-structured one-on-one interviews or focus groups. Examining their different perspectives provided insights into how EDU 2.0 policies were cascaded down to them and their influence on them. Additionally, the fieldwork demonstrated whether the implementation of EDU 2.0 reform was effective from their point of view.

1.3. Policy Relevance

The research study is directly related to SDG4, “Quality education,” since EDU 2.0 reform focuses on ameliorating the quality of education in Egypt. It is also aligned with Egypt's vision 2030 because education is a critical component of it, where the seventh pillar highlights education and efforts to improve it. Finally, it is in line with the MOETE’s strategy announced in 2018 of EDU 2.0 national reform.

1.4. Thesis Outline

This study is divided into seven chapters to present its course of development, starting from chapter one, where the introduction is exhibited. The introduction included an overview of the status of education and its reforms, a problem statement, research purpose, research questions and sub-questions, how the study fills the research gap, policy relevance, and a thesis outline. Chapter two explains the conceptual framework followed in the study and different factors identified during the extensive literature review research and the filed work. Chapter three discusses the three literature review themes as follows: education reforms and their challenges, education reform stakeholders, and the case of Egypt and Sohag. Chapter four explores the Egyptian context and the story of education reforms in Egypt and its challenges, then sheds light on the recent EDU 2.0 reform. Chapter five explored the research methodology followed in the study showing the research design and other steps taken during the fieldwork. Chapter six presented the fieldwork findings and the analysis based on the mentioned results. In addition, this chapter mentioned the limitations faced by the study alongside the ethical considerations followed by the researcher. Finally, chapter seven constructed the conclusion, policy recommendations, and future research suggestions.

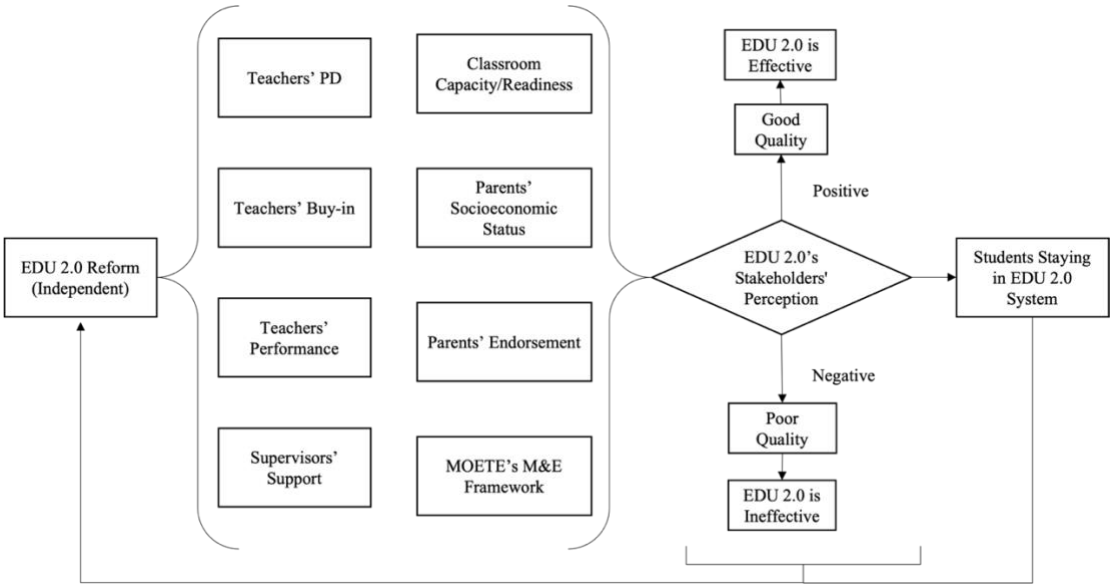
Chapter Two: Conceptual Framework

2. Conceptual Framework

This chapter discusses the conceptual framework of the study. In addition, this research study assessed the effectiveness of Education 2.0 reform in Sohag, examining Sohagi teachers' and parents' responses and investigating the influence of several moderating factors that affect the quality of education. The factors were identified from previous research studies in the field of educational reforms performed in different countries. Additionally, those factors were confirmed during the fieldwork. The eight factors that were identified were the teachers' buy-in, teachers' performance, classroom readiness, classroom capacity, supervisor's support, parents' socioeconomic status, parents' endorsement, teachers' professional development, and the MOETE's monitoring and evaluation. Finally, education quality was identified as a determinant factor to affect parents' decision of whether their children would stay in EDU 2.0 system or not.

Figure 1

Conceptual framework



Source: Developed by the Researcher based on Crossley, 2019; Tao, 2022; Ng, 2008; & Badran et al., 2021.

2.1. EDU 2.0 Reform

EDU 2.0 reform is the reform launched by the Egyptian MOETE in 2018, aligned with Egypt's vision for 2030 to transform the K-12 education system in public and private schools teaching the national curriulum. EDU 2.0 reform had a number of specific goals, such as "developing a competency-based, multi-disciplinary, technology-enabled curriculum, in line with the international movement towards fostering 21st-century skills acquisition" (Moustafa et al., 2022, p. 2). EDU 2.0 was planned to be launched in 2018, starting with pre-primary stages and grade 1and then each year, a new grade will be included till the full adoption to grade 12 in 2030. In addition, the other grades received some transformative measures, such as the computer-based

assessments for the secondary stage students; this reform track was called EDU 1.0. Furthermore, EDU 2.0 was the disruptive uprooting track of the reform; as a result, the reform's known name was Education 2.0. According to Marey and Maged (2022), EDU 2.0 required a redesign of the curriculum and teaching strategies to become student-centered. As a result, the reform was transformative on different levels related to teachers, curriculum, and students.

2.2. Teachers' buy-in

Teachers' buy-in was one of the eight moderating factors that were identified during the literature review and confirmed during the fieldwork. It was found that teachers' consensus was critical to the effectiveness of educational reforms; Matsumoto (2019) claimed that the missing ingredient in UAE's recent educational reforms was the teachers' buy-in. Muricho and Chang'ach (2013) stated that the failure of Kenya's educational reforms was due to the exclusion of teachers during the policies design phase and cascading down the reform policies to execute. Their opinion showed the prime importance of gaining teachers' buy-in for implementing effective reforms.

2.3. Teacher's Performance

The importance of teachers' performance inside the classroom was reassured by the World Bank (2008) being the front liners for the reform's implementation. Their role is important in the academic aspect and the learning environment they provide for their students inside the classrooms. Tyack (1999) emphasized this role in his study, where the respondents correlated their most memorable school moments with their teachers (as cited in Hunt, 2005). It is evident that teachers and their performance are key to EDU 2.0 reform's effectiveness.

2.4. Teachers' Professional Development

Buckner et al. (2016) pointed out that capacity building is crucial to improve teachers' skill sets. As a result, one of EDU 2.0 reform's pillars was establishing teachers' professional development frameworks (Moustafa et al., 2022). Moustafa et al. (2022) praised the initiatives the MOETE launched to train teachers on the new competency-based frameworks and their efforts to upskill teachers' capabilities. One of those initiatives was MOETE's partnership with Discovery education company[1] to initiate a series of workshops that creates a community of master trainers and teachers' communities of practice.

2.5. Classroom Capacity/Readiness

Classroom capacity is an essential factor that impacts the quality of education. According to ElBaradei (2021), Egypt is characterized by high classroom densities. She elaborated that this is one of the major challenges facing educational reforms. Ministry of Planning and Economic Development (MPED) in 2018 reported that the average classroom density in 2017/2018 was 43.7, which is a severe issue that affected students' understanding and education quality. She also mentioned that since 43.7 is the average number of students per classroom, this means that in some areas, the number exceeds this average. The high number of students in classrooms definitely impacts the quality of education.

An integral part of EDU 2.0 was to harness technology-based approaches in classrooms to prepare students for the new era. ElZayat (2022) discussed how launching the Egyptian

[1] The partnership with Discovery Education company's goals were to deliver the teachers professional development trainings on Education 2.0 reform's new philosophy and prepare the master trainers to go to their schools and train the other teachers (Moustafa et al., 2022).

Knowledge bank was a huge leap in the technology transformation initiated by the MOETE. In addition, the MOETE's partnership with Edmodo platform during the COVID-19 pandemic was an impactful initiative to provide access to educational material during the lockdown. These activities showed the MOETE's dire efforts to integrate technology into the Egyptian education system. Consequently, classroom readiness aims to examine how the classrooms infrastructure was prepared to deal with those technological approaches and the measures taken by the MOETE to transform them to become technology-enabled classrooms.

2.6. Supervisors' Support

According to Moustafa et al. (2022), the MOETE's professional development training planned to establish a community of master trainers. The master trainers were supposed to cascade down EDU 2.0 reform's pedagogical approaches to teachers and acquire their buy-in. Master trainers were crucial in the MOETE's plan to execute the policies and implement the reform plan. Their support was the starting point to ignite the implementation process among the local public schools by teachers.

2.7. Parents' Socioeconomic Status

Parents' socioeconomic status greatly influenced their educational decisions toward their children (Tan, 2019). In Singapore, wealthy parents assigned their children to private tutoring to ensure their achievement of high scores, while they could have depended on the Direct School Admission system (DSA), the equivalent of public schooling, which does not require high grades. On the other hand, parents with poor socioeconomic status stuck to the DSA system ignoring the idea that their children should score high grades. In Sohag, most parents suffer from poor

socioeconomic status due to the fact that Sohag is one of the poorest governorates in Egypt, suffering from low government expenditure, as pointed out by ElBaradei and ElBaradei (2004). Consequently, the parent's socioeconomic status would affect their decisions toward their children's education.

2.8. Parents' Endorsement

In Singapore, parents' endorsement affected their students' performance when the exam reforms were launched (Tan, 2019). Their impact affected the effectiveness of Singapore's reform, which showed how powerful their influence was and how important it was to gain their buy-in. This moderating factor discusses the Egyptian MOETE's efforts to acquire parents' buy-in. It also explores the parents' perception of such efforts and how it influenced their impression and adoption of EDU 2.0 reform.

2.9. Ministry Of Education and Technical Education Monitoring & Evaluation Plans

Moustafa et al. (2022) mentioned that the MOETE did not release any EDU 2.0 reform strategy documents. In addition, the Research and Documentation Project (RDP) project was intended to document EDU 2.0 reform's activities and its impact on building a knowledge management system to support further research. The MOETE partnered with the Social Research Center at the American University in Cairo to initiate the project, which was led by Dr. Linda Herrera. The project was funded by the British Embassy and started in 2019 and ended in 2022. According to the American University in Cairo's projects and grants website (n.d.), the project was established in response to parents' complaints amid the first secondary stage computer-based assessments in 2019 to analyze the situation.

2.10. Education Quality and EDU 2.0 Effectiveness

The quality of education is essential to national development and economic growth. Thapa (2015) mentioned that the quality of education affected the citizen's acquisition of high or low-paying jobs. The education quality determined their ability to join the population below the poverty line or those above it. Consequently, it was reflected in the nation's economic growth and development. Nevertheless, education was one of the seven pillars highlighted in Egypt's 2030 vision, and EDU 2.0 reform was launched to raise the quality of education (Mostafa et al., 2021).

There are myriad definitions for the quality of education; scholars did not agree on a certain definition to encompass its different dimensions. However, The United Nations Sustainable Development Goal (UNSDG) #4 is titled "Quality Education." It aims to "Ensure inclusive and equitable quality education and promote lifelong learning opportunities for all" (United Nations, n.d.). UNSDG4's objective focuses on inclusion, accessibility, and equality, with ten global targets to achieve. Furthermore, Doherty (2008, p.2) described quality as an elusive concept that could be "fitness for purpose" or "excellence". On one hand, being fitness for the purpose would require a clear definition of the purpose and setting clear indicators to measure it. On the other hand, excellence as a definition of quality is subject to being accommodating to social standards. Moreover, Tawil et al. (2012) defined a comprehensive framework titled "The Multi-dimensional Approach," recognizing several criteria to measure the quality of education, which are: Relevance, Pertinence, Equity, Effectiveness, and Efficacy. Relevance means that education qualifies the students for practical life. While Pertinence is that education caters to diverse student nature and capabilities. Equity means *that* education takes social justice into consideration. Moreover, Effectiveness means education is accessible to all students. Finally, Efficiency means that

education effectively allocates resources. Therefore, different definitions for the quality of education could be adopted based on the social context of each educational experience and its relevancy to its goals.

Education quality here means the perception of its quality by the involved stakeholders, such as teachers and parents. If the teachers and parents in Sohag consider the quality of education was enhanced after the implementation of EDU 2.0 reform, then this means the reform is effective and is working well. If they believed that EDU 2.0 system is of poor quality, it means that the reform is ineffective and did not work. The stakeholders' perception of the reform and their satisfaction determines whether it is of good or poor quality. Their perception would also influence their adoption of further reform measures and determines its success.

2.11. Student Staying in EDU 2.0 System

This moderating factor was identified during the fieldwork as one of the critical findings. 'Student staying in EDU 2.0 system' meant that they are allowed by their parents to continue in the regular schooling system following the EDU 2.0 reform. The assumption is that if parents are not satisfied with the EDU 2.0 system or find it too challenging to their children, parents might decide to discontinue their children education process completely due to their dissatisfaction of EDU 2.0 schools. Moreover, parents might consider moving their children to another type of educational systems, whether religious, just as Azhar, or to private education, if they can afford it. Azhari system is perceived as a demanding and tough system for Egyptian students where most of students do not perform well in it, as a result, parents might decide to withdraw their children from

schools and stay home. In both cases the results of this assumption might lead to increasing the school drop-out rates in Sohag.

Chapter Three: Literature Review

3. Literature Review

This chapter provides an overview of literature covering educational reforms, education case studies, stakeholders involved in the education system, and the Egyptian situation with respect to education and its reforms. The literature reviewed covered both peer-reviewed articles and international reports by international development agencies such as the World Bank, UNICEF, OECD, and others. The time frame covered by the literature review sources extended roughly from the year 2000 onwards. The first section discusses educational reforms and their influence on nations' economic growth, the challenges faced by governments during their implementation, and a number of case studies from different countries. The second section explores the importance of different stakeholders' involvement in educational reforms. The third section highlights the Egyptian status in relation to educational reforms focusing on Sohag governorate. Finally, the researcher discussed the research gap that the thesis is covering.

3.1. Educational reforms and their challenges

3.1.1. Education, reforms, and nations' economic status

Education exhibits prime importance when it comes to nations' socioeconomic status and is an integral contributor to nations' goals and future aspirations. One of education's essential objectives is to sustain the markets with competent labor in order to ameliorate the economic status. Zivengwa et al. (2013) claimed that education could be considered a consumer and capital good, and that this is obvious when the economic results from well-educated human capital were examined. Selim (2006) confirmed that the consequences of a good quality education supplying a qualified workforce were extremely positive on countries' economic development. Moreover, Thapa (2015) argued that education affected nations' economic performance on both the micro

and macro levels. On the micro level, illiterate citizens were more likely to join lower-paying jobs and stay below the poverty line, which was reflected negatively on the nation's macro-level economic status. The low productivity of the uneducated was manifested in the nations' slowed macroeconomic growth. This reaffirmed the essential role education plays in countries' economic development and goals for the future.

Moreover, education's magnitude of influence is multifaceted and impacts several aspects of nations' future and power dynamics. Garm and Karlsen (2004) have pointed out that education aims not only to generate a qualified workforce for a country but also to pass on the cultural legacy, language, and national identity to future generations. McNamara (1995) agreed that educational goals would go beyond creating a competent workforce and added it would have a powerful impact on the national decision-making process (as cited in Hunt, 2005). He provided evidence that the dramatic decision of the Vietnam war was a result of the lack of knowledge of Vietnam's history and culture. McNmara's example shows how influential education could be, where it affected two countries' fate for several years and the lives of hundreds of people.

Since education possessed such a tremendous value to nations, its quality would require their significant concern. Abi-Mershed (2010), Carnoy and Rhoten (2002), Finnan (2000), Hargreaves (2007), Hallinger (2010), and Hallinger and Bryant (2013) agreed that educational reforms possessed a massive value to nations that seek better economic performance. The above-mentioned scholars highlighted that reforms represented countries' attempts to reach a panacea to educational challenges and failures. However, the current global education system, from the viewpoint of many, is distinctly flawed. In an era of increasing economic and cultural uncertainty, many groups were legitimately and genuinely concerned about their children's future (Apple, 2016). Gallup (2017) agreed with Apple in "Confidence in institutions" that the public confidence

in school settings has dramatically declined, and Cohen et al. (2018) elaborated that the study clarified that this might be a result of the changes implemented. Sarason (1993) explained in his publication "The case for change" that reforms were doomed to fail because policy-makers underestimated the complexity of the issues faced and were unable to, or unwilling to, utilize the cumulative experience that had been acquired over the years (as cited in Hunt, 2005). Moreover, Kliebard (1988) agreed that, regrettably, curricular reforms were occasionally sought as the end in mind instead of being a course adjustment to educational systems (as cited in Hunt, 2005). They did not arise from firmly rooted pedagogical verdicts but rather as means of a public exhibit. Garm and Karlsen's (2004) opinions aligned with the previously mentioned scholars adding that although educational reforms were expected to be constructed based on national agendas, they were deeply influenced by globalization and other countries' experiences. Accordingly, educational reforms were in many cases neither inspired by each country's context nor tailored to its needs; they were interventions to fulfill governments' aspirations to mimic other countries. Thus, this would result in major concerns about the reforms' success, results, and final impact on nations' future and aspirations.

3.1.2. Education reforms' challenges

Education reforms encountered a variety of challenges, where some of which were common in different countries, while others were specific to certain nations. The World Bank (2008) pointed out a number of challenges specific to the Middle East and North Africa (MENA) region in its report "The Road Not Traveled." The report highlighted an interesting fact that the majority of educational reforms within the MENA region focused on structural, institutional, and curricular reforms. However, it predicted that the region needed reforms attentive to changing the behaviors of education key stakeholders such as teachers and school leaders, highlighting that this

was the road not traveled for reforms in MENA. On the other hand, Schleicher (2006) confirmed the World Bank's claims declaring that the one significant element of Finnish reforms' success was "the capacity of policymakers to pursue reform in ways that went beyond optimizing existing structures, policies and practices, and moved towards fundamentally transforming the paradigms and beliefs that underlay educational policy and practice until the 1960s" (p. 9). Additionally, Akkary (2014) agreed with the report mentioning that educational practitioners should cooperate with policymakers to reconsider traditional teaching methodologies. In addition, Akkary considered their role crucial when it came to tailoring the Western borrowed educational reforms. Both Akkary and the World Bank agreed that globalization shapes the educational reform directions shifting from the nations' identity and that countries should be vigilant to its influence. In conclusion, as the front liners of reform implementation, educational practitioners should be involved during the reforms' design, and their consensus is of prime importance.

Since reforms face different challenges that differ according to countries' context, considering the community power dynamic is of extreme importance while planning for an educational reform. For instance, in China, Fang and Liu (2009) have mentioned that the Chinese education reforms face criticism from the community and scholars for being biased toward Western policy transfer. The criticism of Chinese reforms was that it was more directed toward citizens with high socioeconomic status ignoring the on-ground classroom environment requirements. Dello-Iacovo (2009) confirmed that Chinese teachers struggled to apply Western methodologies inside classrooms when executing reform policies. While Ryan et al. (2009) have mentioned other challenges facing China's educational reforms, such as the large class sizes, shortage of teachers, unqualified teachers, under-resourced rural areas, teacher-centered curriculum, and outdated conventional ways of instruction. Dello-Iacovo (2009) have added to

these challenges the lack of fund to support the expensive curricular reforms. Finally, The Chinese policymakers faced several challenges due to the nature of the conservative socialist Chinese community and the social stratification they own. Thus, countries should consider the nature of their communities during reform's planning, in addition to the on-going challenges that arise during the implementation. The Chinese officials implemented several mitigations in order to overcome these challenges which will be discussed later in the 'case studies' section.

Meanwhile, Finland's educational reforms were challenged by globalization, where the Finns had to integrate their education with the global knowledge economy and maintain their national identity (Sahlberg, 2010). Hardy et al. (2021) argued that at first, the Finnish teachers struggled with the new curriculum and fragmented efforts due to the launch of different projects and requirements while they were still adjusting to the reform. They added that including the teachers in the late stages of the reform prolonged the time they needed to embrace the reform and act upon it. In accordance, this could be considered as another piece of evidence from Finland that supported the importance of teachers' inclusion in the primary stages of educational reforms.

3.1.3. Case Studies

The academic scholars have examined a variety of case studies demonstrating how different countries implemented educational reforms, such as China, Finland, and Singapore. This section discusses a number of case studies concerning countries with diverse natures drawing on their experiences of educational reforms. Six criteria were chosen for comparison: teacher participation during the reform's design phase, parents' participation during the reform's design phase, curriculum reforms, students-centered approaches, and decentralized school administration. Upon reviewing the literature, differences, and commonalities between those case studies were

discovered and will be highlighted later. This comparison will provide a deeper understanding of the education reforms' implementation and their results. Factors contributing to the educational reforms' success will be discussed and analyzed later in the findings and discussion chapter.

Table 1

Countries and educational reforms criteria

Country/Criteria	**China**	**Finland**	**Singapore**
Teacher participation during the design phase	✕	✕	✕
Parents participation during the design phase	✕	✕	✕
Curriculum reforms	✓	✓	✓
Students-centered approaches	✓	✓	✓
Decentralized school administration	✓	✓	Centralized-Decentralized
Teachers Professional Development	✓	✓	✓

Source: Developed by the Researcher

3.1.3.1. China

The Chinese educational system had undergone several reforms to reach quality education with the learner at the center of the educational process instead of the exam-focused Chinese traditional approaches (Dello-lacovo, 2009). In Joong's study (2012), teachers were satisfied with the professional development programs provided to them and the support they received to transform the curriculum into student-centered learning. Liu and Fang (2009) mentioned the new

Chinese education policies had a number of goals to reach this objective which were: shifting toward higher school autonomy, a global knowledge economy, student-centered approaches, and teacher-incentive educational programs. Although a number of teachers were still struggling with the new education policies' implementation, they agreed there was a noticeable change in their performance (Joong, 2012). The Chinese government extended community participation through students, teachers, and parents' committees, increasing their school administration participation (Tao, 2022). The government minimized its authority over schools and offered more autonomy to school administration in what Tao referred to as "Network Governance." However, Liu and Fang (2009) reported that teachers still struggled to deliver their ideas and reflections on the reforms. The reform started as a top-down approach; however, Chinese policymakers planned to involve community partners during the implementation. In addition, the community of practice programs that were offered to teachers left positive feedback and empowered the teachers to deliver better performance (Ryan et al., 2009). Although Chinese teachers were exposed to diverse international teachers' communities, they found common challenges and inspired one another to solve their local challenges. Although the Chinese educational reforms had a number of shortcomings during the planning phase and faced several difficulties during the implementation, they showed positive results in different aspects. For example, teachers' communities of practice, decentralization, and parents involvement were of the most prominent constructive results.

3.1.3.2. Finland

Different countries tried to follow Finland's footsteps in educational reforms to achieve their high TIMMS and PISA scores (Sahlberg, 2010). Sahlberg (2010) declared that Finnish schools were characterized by a high level of decentralization, professional methods for student support, and highly qualified teachers. Malinen et al. (2012) argued that the highly sophisticated

teachers' education system in Finland and the thorough selection that teachers go through were the reasons behind the extremely qualified teachers that Finland provided to students. On the other hand, Sahlberg (2011) argued that Finland held school administrators and teachers accountable for their schools and put rigorous measures to monitor them; consequently, parents became more confident in schools. Although Finnish parents were not involved in the reform design, there were given a high degree of autonomy to choose the schools their children would learn at and to collaborate with the teachers and schools (Malinen et al.,2012). The Finnish approach of establishing a culture of trust and autonomy in schools and teachers encouraged them to choose personalized educational pedagogies for the students; however, this did not mean that the traditional teaching methods were not used (Sahlberg (2011). Sahlberg (2011) described that as a peculiar anomaly that he could not explain concerning the idiosyncrasy of Finnish education. However, this might be the reason behind the diversity that led to the Finnish system's success. To conclude, the Finnish education system is considered one of the best based on students' high international test scores and it possessed unique features of autonomy, accountability, and personalization alongside parents' high degree of participation.

3.1.3.3. Singapore

In Singapore, a remarkable education reform case was presented where Singaporeans suffered from post-colonial education burdens, and the policymakers decided to initiate several educational reforms amid independence. One of the most significant was the "Thinking Schools, Learning Nation (TSLN)," which was launched in 1997 (Hairon, 2022). TSLN was a national strategy that extended for several decades focusing on curriculum transformation, teachers' professional development, and decentralization. Hairon (2022) declared that education in Singapore was highly centralized, however, the government recognized the importance of

decentralization and was constantly trying to balance centralization with decentralization by giving schools and teachers a greater level of autonomy. The government ensured teachers and schools autonomy by providing the freedom in school administration management and curriculum design. This unique model of centralized-decentralized system was suitable to Singapore's identity and ambitions of staying a competitive nation efficiently using its limited resources while achieving individual satisfaction. The control-autonomy balance was Singapore's recipe to keep policy makers and citizens satisfied which according to Hairon (2022) its dynamic nature was working effectively in the educational reforms context.

In 2004, Singaporean Prime Minister Lee regenerated Singapore's commitment to the concept of quality over quantity, saying, "Teach less, Learn more" (Ng, 2008, p. 1). Lee and Gopinathan (2015) elaborated that the curricula quantities were decreased so that the focus would be on the learning outcomes and new transformational pedagogies and project-based learning. Schools and teachers were accountable for the pedagogies and curricula to craft them in order to meet students' needs and enhance their higher-order thinking skills (Hairon, 2022). He continued by saying that the Singaporean curricula focused on citizenship and reinforcing the national identity. Ng (2008) confirmed teachers' commitment to enhancing student engagement upon the launch of the Strategies for Effective Engagement and Development (SEED) initiative by MOE. Furthermore, teachers started communities of practice where they could meet and discuss using more effective engagement strategies, reorganizing the curriculum and more influential pedagogies. On the other hand, Singapore was originally an East- Asian country suffering from exam-centered education; as a result, education reformers suffered from parents' resistance and their high academic expectations of their children (Tan, 2019). Tan explained that Singapore's dedication to diminishing the exams' impact on students was evident in the Direct School

Admission (DSA) project, where students were admitted to high schools based on their non-academic achievements, such as their art and sports skills. Although students had to achieve a minimum score in the traditional exam, it was not the determinant factor for joining high schools. According to Tan (2019), since DSA was optional, rich parents aimed to increase their children's chances by offering them shadow education to augment their academic and non-academic talents in order to guarantee their children's admission to the best schools. On the other hand, middle-class families had no choice but to stick to DSA in order to guarantee good quality education for their children. Accordingly, Singaporean parents still believed in test scores and their influence. Singaporean MOE should exert more effort to uproot these parental beliefs and change these community perceptions. Thus, Singapore focused on the quality of education, adopting student-centered approaches and initiating teachers' communities of practice. However, they struggled with parents' embracing the new system and changing their exam-centered mindsets.

Furthermore, the above-mentioned three case studies were examining the educational reforms in China, Finland, and Singapore from the perspectives of several scholars published as journal articles and book chapters. Scholars used qualitative and quantitative methodologies such as surveys, classroom observations to study the reforms, and focus groups. Some scholars were trying to evaluate the success of reform implementation in different countries by exploring teachers, parents, and students perceptions of the reforms (Joong, 2012; Tan, 2019), the challenges teachers faced during the implementation, the influence of teachers communities of practice on the quality of education (Ryan et al., 2009), the development of 'Network Governance' (Tao, 2022), the influence of highly qualified teachers on the quality of education (Malinen et al., 2012). Finally, researchers tried to evaluate the different educational reforms' interventions in the three countries to assess their effectiveness and influence on the quality of education.

Finally, after discussing the three educational reforms case studies in China, Finland, and Singapore, it is obvious that several similarities exist and guarantees education reforms' success, while other factors were specifically dependent on the country context. The three countries were ranked as top performers in PISA scores for several years; therefore, their educational reforms worked well (Tan, 2019). Moreover, the common features in the three countries' educational reforms were decentralization, school and teachers' accountability, student-centered pedagogies, curricula reforms, and teachers' professional development programs. In addition, teachers' communities of practice and exchanging experiences were distinctive features in the ongoing development of teachers' skills. Furthermore, parents' inclusion and their increased collaboration with teachers and school administration were influential in acquiring the community support needed for reforms. Despite the fact that parents and teachers were not involved in the design phase of any of the educational reforms, inclusion in the implementation phase, coupled with a high degree of autonomy, were extremely beneficial for the reforms' effectiveness. It is worth mentioning that the unique nature of Singapore's centralized-decentralized educational policies were an interesting example to show an innovative approach of fighting centralization and serving the common good. These different countries policies and intervention could be tailored to other countries' context to support their plans for a better-quality education.

3.2. Stakeholders of the Educational Reform Process:

Contrarily to the more robust notion that democracy is built on full participation in the creation and reconstruction of the most significant institutions, Apple claimed (2006, 2014) that democracy in education and the greater society is currently regarded as a consumer choice on a market that is competitive. Apple argued that it is becoming increasingly obvious that education is a battleground for conflict. Apple (2006) continued that there was an endless controversy over

what constitutes formal knowledge, excellent teaching, and proof of accomplishment, as well as who should raise and respond to these questions. Additionally, Garm (2002) agreed with Apple stating that since educational reforms are shaped by globalization which impacts different countries and public establishments, it was concomitantly everybody's concern. Thus, multiple actors were expected to be involved in educational policies and its governance.

The involvement of several stakeholders would mean public participation and entail a democratic process. Although Garm (2002) believed that education should be subjected to democratic national conversations, Mazawi (2010) and Sayed (2005) believed that the lack of democratic discourse in the Arab region's reforms condemned them to failure. They illustrated that this lack of democratic dialogues reinforced the educational professionals' suspicions that arose from governmental cooperation with international organizations. Sayed (2005) claimed that it was often the reason for the mass resistance toward educational reforms in Arab countries. Samoff (2004) indicated that their skepticism appeared to be justifiable because being dependent on the international fund would be binding to nations and revoke their independent decision-making. Crossley (2019) emphasized that this direct paradigm of policy transfer was more abundant in low-income nations with post-colonial reliance. Steiner-Khamsi (2014) argued that indirect policy borrowing could be seen in global goals and standardized testing; she pinpointed that globalization could be used to drive national coalitions toward a specific educational reform. Gove (2012) confirmed her allegations when he discussed how Hong Kong's PISA test results were used by the secretary of education in England to form coalitions supporting the PISA reform interventions. To conclude, democratization in educational reforms decision-making would alleviate the community's suspicion of the driving force behind reforms and eradicate its fears

regarding national identity, thus there should be concerted efforts exerted to engage the different groups of stakeholders, especially – as we will see later – teachers and parents.

3.2.1. Teachers

Teachers are one of the most critical stakeholders in the educational process and possess a significant influence on the reform's success, as well as on students' life. The World Bank (2008) argued that one of the educational reforms' critical success factors was teachers' motivation because they were the active agents implementing the reforms inside classrooms. Furthermore, Tyack (1999) mentioned that during his studies, respondents declared that the most remarkable moments of school were with their teachers who supported them and challenged their intellect (as cited in Hunt, 2005). It was clear that teachers play an essential role in the education system, which should be taken into account when designing educational reforms.

It was mentioned that there was resistance to educational reforms inside public establishments and the whole society (Sayed, 2005). Moreover, the World Bank (2008) declared that educational policies adopted a top-down approach in the MENA region. Besides, Akkary (2014) argued that teachers' professional development programs in the MENA region nurtured the teachers' "passive role" in the decision-making process (p. 10). Muricho and Chang'ach (2013) reassured that when examining the Strengthening of Science and Mathematics in Secondary Education (SSMASE) educational reform in Kenya and reporting its failure. They attributed this failure to the lack of teachers' participation in the reform design phase and adopting top-down strategies. Teachers were bombarded with policy reform decisions, and no effort was invested in acquiring their buy-in. Fullan (2000) demonstrated that teachers being the change agents, the policy-makers' prime concern should be the teacher's perception of the reform policies and their

adoption. On the other hand, Bashshur (2005); Jarrar (2007); Karami-Akkary et al. (2012) agreed that there was no investment in upskilling teachers' competencies in order to be involved in the decision-making process. Thus, teachers' roles were only restricted to implementing the top-down educational policies, which reflected the lack of ownership given to them and the sense of coercion implanted in their minds.

Teachers were faced with several challenged on the ground which augemented their resistance toward the reforms in the MENA region. The World Bank (2008) and Karami-Akkary et al. (2012) agreed that there was a huge gap in teachers' professional development in the MENA region. The World Bank (2008) highlighted that teachers' capacity building in Egypt was considered a means to achieve a promotion. In addition, Karami-Akkary et al. (2012) stated that teachers' training programs focus on learning methodologies and concepts, disregarding the in-classroom procedures and meta-cognition. Akkary (2014) reported that the training programs neglected their needs and their preferences. The above-mentioned shortcomings would affect teachers' perception of the reforms and augment their lack of ownership, intensifying the reform's liability to failure.

3.2.2. Parents' Consensus

Another critical stakeholder to the educational reform process are parents and their role contributing to educational reforms. The World Bank (2008) stated that one of the crucial success contributors to educational reforms was the involvement of parents in shaping educational policies. Consequently, the top-down approaches followed upon implementing educational reforms do not result in acquiring the desired parents' consensus. Based on the United States "No Child Left Behind" study, where school assessment cards were generated, Cameron et al. (2006) mentioned

that this initiative proved that bottom-up approaches were more effective than top-down approaches. The initiative strengthened public engagement in the decision-making process. Gillies (2004) confirmed that when it was applied in Namibia, it was highly impactful in reinforcing parents' involvement in schools' improvement. The two above-mentioned examples came from a developing country and a developed country where the efforts exerted in engaging parents and granting them ownership led to positive outcomes. It emphasized the importance of including the bottom-up approach in designing educational policies.

Furthermore, parents' perception of education quality is an essential aspect that reforms need to focus on in order to acquire their satisfaction with educational interventions. Joong (2012) claimed that parents focused on exam results and adopted examinations to measure education quality. In his study examining the Chinese education reform, Joong claimed that this quality measurement method was ineffective and required a change in the Chinese community's perception. On the other hand, in Finland, the policies of autonomy and establishing trust in teachers and schools reinforced parents' confidence in education; consequently, parents collaborated with schools and teachers to reach better quality education (Sahlberg, 2011). Evidently, parents' inclusion in educational reforms and gaining their trust positively impact educational reforms' effectiveness and expand the possibilities for their adoption and success.

3.3. Education 2.0: The Case of Egypt and Sohag

This section discusses the education status and quality in Egypt. It focuses on the most recent reform launched by the Egyptian MOETE which is Education 2.0. Further elaboration will be provided about EDU 2.0 plans, challenges, and actions. In addition, the situation in Upper

Egypt, specifically Sohag governorate will be explained from the perspective of education and the new EDU 2.0 reform.

Egypt adopted several measures when the GOE launched Egypt Vision 2030; they covered a variety of sectors in order to achieve a better socioeconomic status. One of the most significant reforms was Education 2.0, targeting K-12 education, which was developed in response to the declining quality of education that did not respond to past reforms (Mostafa, 2021). On the other hand, Egypt suffered from several challenges, such as high-class density, high drop-out rates, high student-teacher ratios in rural areas (Hosny et al., 2022), resources scarcity, unqualified teachers, and inappropriate curricula (Moustafa et al., 2022). ElBaradei and ElBaradei (2004) agreed that the Egyptian curriculum is rigid, leaving no room for teachers to customize their curricula according to students' needs.

Moustafa et al. (2022, p. 57) pointed out that EDU 2.0 aimed to transform the Egyptian k-12 education to become "competency-based, multidisciplinary, technology-enabled curriculum". EDU 2.0 targeted replacing memorization with new educational pedagogies that enhanced higher-order thinking skills, and this required teacher training in order to be able to achieve the intended learning outcomes (Marey and Maged, 2022). Hosny et al. (2022) identified a number of key areas of teachers' development, such as learning pedagogies, educational tools, and empowering environments to support their efforts. In addition, Marey and Maged (2022) pinpointed that different stakeholders required training and preparation to guarantee EDU 2.0 success mentioning parents as one of the key players that needed to be included. Nevertheless, MOE's efforts were neither organized nor impactful; for example, Moustafa et al. (2022) mentioned that MOE did not share any EDU 2.0 strategy document. Their study was based on a literature review and a

partnership with EDU 2.0 Research and Documentation Project (RDP), which Dr. Linda Herrera led. The researcher did not find any published documents related to the RDP project.

Although Akkary (2004) mentioned that Upper Egypt suffered from high illiteracy rates, Hosny et al. (2022) said Sohag was one of Upper Egypt's governorates with high enrolment rates. However, according to the CAMPAS's final results of its 2006 – 2017 Population, Housing & Establishments census, the illiteracy percentage of citizens older than ten years in Sohag was in 41.5% for females and 26.5% for males in 2017 (2022). The percentage placed Sohag among the highest governorates recording high illiteracy rates, which meant that Sohag possessed an elevated dropout rate. Akkary (2004) elaborated that education in Egypt's rural areas did not empower people to improve their socioeconomic status because it did not contribute to the labor market skills needed, yet, a university education would. Fergany (1995) recognized that poor school quality combined with the low socioeconomic status of citizens in rural areas deprived them of the opportunity to seek tertiary education; accordingly, education did not support them to reach higher socioeconomic standards (as cited in Akkary, 2004). Moreover, CAPMAS, in 2019, stated that the poverty rate in Sohag was 59.6%, ranking the second poorest governorate in Egypt following Assuit. Moreover, Sohag is underserved in terms of education; according to CAPMAS data (2022), the student/teacher ratio in Sohag is among the highest governorates, which means there are insufficient teachers in Sohag. ElBaradei and ElBaradei (2004) identified Sohag as one of the disadvantaged governorates in terms of government expenditure on public education, which led to lower education quality accompanied by low education earnings. Consequently, Sohagi citizens seemed to be trapped in a vicious circle of poverty and poor-quality education.

Table 2

Students/Teachers ratio in primary stage among different Egyptian governorates of public education system (2020/2021)

Governorate	Rate
Cairo	38.7
Sohag	28.6
Alexandria	39.3
Assiut	31.8

Source: Adapted from CAPMAS Statistical Yearbook - Education (2022)

3.4. Research gap

There is plenty of published research on the educational reforms in Egypt implemented over the years; nevertheless, there is a significant research gap discussing EDU 2.0 reforms in Egypt, especially its implementation and effectiveness in underprivileged areas available about Education 2.0. Moreover, the MOETE did not share with the research community or the public any strategy documents, Monitoring and evaluation plans, results, statistics, or effectiveness of EDU 2.0 reform reports; the researcher found data about EDU 2.0 reform through international partner reports and several scholars who studied specific aspects of the reform. However, the MOETE had planned to support the Research and Documentation Project (RDP) to record EDU 2.0 reform's implementation and impact, yet the project was not continued. Nonetheless, the few studies that discussed the reform focused on which policies were implemented and which were not (ElZayat, 2022; Marey & Maged, 2022; Moustafa et al., 2022). Even studies that discussed

teachers' responses did not target vulnerable communities (Badran et al., 2021; Marey et al., 2022). Sohag, one of the poorest governorates in Egypt dealing with the transformative EDU 2.0 reform, should have received more focus from scholars. The effectiveness of EDU 2.0 in such a low socioeconomic governorate known for its high illiteracy rates required close monitoring and evaluation. The published studies did not examine the teachers' or parents' response to EDU 2.0 reform, whereas, in Sohag, their response might differ when compared to the advantaged areas such as Cairo and Giza. As a result, this study aims to examine the effectiveness of EDU 2.0 reform focusing on teachers and parents in Sohag, one of the underserved communities in Egypt.

Chapter Four: Egypt Context

4. Egypt Context

Since Egypt is a developing country striving to reach ambitious goals, the quality of education gained critical importance to the government. Consequently, several reforms were adopted over the years with the aim of enhancing the quality of Egyptian education. This was clear when education was an essential cornerstone of Egypt Vision 2030; it reflected that the political leadership was supporting educational development. Egypt Vision 2030 stated that education must leverage human capital for social development during the upcoming 13 years (World Bank, 2017). In addition, the 2014 constitution pledged adherence to good quality education which showed the salient necessity of the educational transformation seen by the Egyptian government (Youssef, 2015). A strong tendency toward reforming education could be detected in those governmental announcements and decisions; however, the implementation of these decisions would show whether it is a genuine determination or not.

The history of the Egyptian education reforms started several years ago with various attempts to catch up with the global educational trends. Ibrahim (2010) and Pouezevara et al. (2014) declared that Egypt started adopting Information, Communication, and Technology (ICT) in schools in the 1990s, which was obvious in the policies related to equipping schools with digital tools. Moreover, Loveluck (2012), OECD (2015), and Zaalouk (2013) explained that this MOETE approach was developed due to the deterioration of education quality, which was experienced for several years. El-Halawany (2018) discussed in her research the early MOETE initiatives, such as improving schools' ICT infrastructure, equipping schools with the internet, launching ICT teachers' development programs, and promoting interactive curricula. Additionally, the World Bank (2017) stated that one of the most critical pillars of Egypt's educational ICT revolution was the adoption of digital learning resources, which was reflected when the MOETE reinforced the use of the

Egyptian Knowledge Bank (EKB). Accordingly, Egypt launched several educational reforms tackling its educational aspirations, such as 2007/2008 – 2011/2012 and 2012 – 2017 educational strategies.

On one hand, the public education system in Egypt is the most attractive one for Egyptian students, with almost 90% of K-12 students attending public schools in 2016/2017 (PwC, 2019). On the other hand, only 11% of Egyptian students were enrolled in the private education system (Oxford Business Group, 2020). During the period from 2009 to 2019, enrollment growth increased by 32% in the public system (PwC, 2019). The high enrolment rate imposed more pressure and created more challenges to the public education system, such as poor resources, high student numbers per class, and poor teaching quality. The structure of the pre-tertiary educational system included three levels: the voluntary pre-primary stage (Kindergarten 1 and 2), the mandatory fundamental stage, including the primary and preparatory levels (grades 1 - 9), and the mandatory secondary stage (10 - 12) (World Bank, 2017). Table 3 shows that the enrolment % of the pre-tertiary education sector in Egypt (2016/2017 – 2020/2021) was marked as the highest in the primary stage when compared to the pre-primary, preparatory, and secondary stages for both genders. It demonstrates that Egyptian students' drop-out rates increase in higher grades, and they are not usually enrolled in pre-primary education. Throughout the period of 2016/2017 – 2020/2021, the enrolment % increased in the primary and preparatory stages while it decreased for both the pre-primary and secondary stages. Finally, the female enrolment rates have always been higher than males across different stages; it is worth mentioning that this gender distribution represents a total of all the Egyptian governorates, so a breakdown of this enrolment % showing their gender distribution among different governorates would be more significant for interpretation.

Table 3:

Pre-tertiary Education Sector data (% of enrolment 2016/2017-2020/2021)

Educational stage	Percentage (%)									
	2021/2020		2020/2019		2019/2018		2018/2017		2017/2016	
	Males	Females	Males	Females	Males	Females	Males	Females	Males	Females
1-Pre-primary	23.9	24.5	28.1	28.9	27.3	28.0	26.4	27.0	31.6	31.6
2-Primary	103.8	107.0	101.3	104.3	92.2	101	96.1	98.6	97.2	98.4
3-Preparatory	98.8	100.0	94.5	96.5	91.9	94.2	90.6	93.8	93.4	95.8
4-Secondary	28.2	37.3	27.3	36.0	26.9	35.2	27.3	35.1	30.1	37.3

*Source***:** CAPMAS, (2022), Statistical Yearbook 2022

According to the PwC (2019), Egypt ranks as one of the lowest-quality education systems. Egyptian students in the basic education stage possessed extremely low levels in reading and different subjects compared to their peers in other countries. Thus, Egypt is ranked as "#49 out of 50 countries of grade-4 students in reading, #34 out of 39 countries of grade-8 students in mathematics, and #38 out of 39 countries of grade-8 students in science" (UNICEF, 2022, para.1). TIMMS (2015) and PIRLS (2016) claimed that more than 50% of Egyptian students' knowledge levels and scores did not match the lower standards of those global tests (as cited in UNICEF, 2022). Besides, low completion rates among poor communities were detected in secondary education (World Bank, 2017). Table 4 elucidates that the completion rates (2009 – 2017) are the lowest in the secondary stage among the poorest students in Egypt when compared to the primary and preparatory stages. It also shows that males are more likely to complete their secondary stage education than females. Therefore, it is evident that most of MOETE's efforts were not delivering the required results of raising the quality of the national Egyptian education system. There was a failure to deliver competent calibers in order to meet the labor market needs or compete for international opportunities. Consequently, a significant increase could be seen in high

unemployment rates, which reached “23.1 percent for those with tertiary degrees, compared to 11.3 for general secondary school graduates” (World Bank, 2017, P. 6).

Table 4

Completion rates of poorest students in Egypt (by stage and gender, 2009 - 2014)

	Completion Rates (%)					
	Primary		**Preparatory**		**Secondary**	
	Female	**Male**	**Female**	**Male**	**Female**	**Male**
Poorest Students	87	86	70	71	52	63
Average all student wealth quintiles	91		80		71	

*Source***:** Adapted from World Bank, (2017), Project Information Document/ Integrated Safeguards Data Sheet (PID/ISDS), The World Bank.

4.1. EDU 2.0, a reform or a transformation?

On the other hand, aligned with Egypt 2030 vision, the educational sector was included in the social dimension as the seventh pillar named “Education and Training,” with the target of "Providing the necessary skills to students and trainees to think creatively and empower them technically and technologically" (CAPMAS, 2016, p. 13). Egypt's 2030 vision was reflected in the Ministry of Education’s announcement in late 2017 regarding educational reforms and the Education 2.0 system (UNICEF, 2020). The comprehensive reforms included several aspects such as digital transformation, curriculum development, and teachers' professional training aiming to

align students' skills with the labor market and provide them with the necessary critical thinking skills. Several global leaders have recognized the Egyptian education reforms; for instance, Dr. Marina Wes, the World Bank Country Director for Egypt, Yemen, and Djibouti, commented: "Egypt's reform program aims to bring learning back into the classroom, which can yield valuable insights for other countries in Africa and the region" (as cited in the World Bank, 2020, para. 4). On the other hand, the COVID-19 pandemic expedited the digital transformation plan of the Education 2.0 program, where online platforms were launched to support distance learning policies; Welsh (2020) states that Egypt provided digital learning spaces for 26,000 classrooms.

Moreover, MOETE launched a US$2 billion educational reform (2018 – 2030) including two parallel programs, Education 1.0 (EDU 1.0) and Education 2.0 (EDU 2.0.). EDU 1.0 is concerned with structural reforms of the educational system, while EDU 2.0 is focused on groundbreaking innovative educational pedagogies, technology integration, and transformational system changes. EDU 2.0 aims to transform the traditional educational system of memorization into a student-centered, competency-based, and technology-literate system (Oxford Business Group, 2020). Dr. Tarek Shawki, the former minister of MOETE, made the new education reform's ultimate goal clear when he said, "We want students to learn for life, not for an exam" (as cited in Saavedra, 2019, para. 6). Dr. Shawki's quotation promised that the next generation would be empowered with knowledge, skills, and competencies that meet the labor market needs and enable the graduates to compete for international opportunities. However, Egypt's government expenditure on education was 2.5% of the GDP in 2020 (World Bank, 2021), which is a significant decrease compared to the previous years; for instance, it was 4.3% of the GDP in 2014. It is extremely peculiar for Egypt's government to have such visionary plans and spend less GDP% on education, although the 2014 constitution mandated that the government should spend at least 4%

of GDP on education (Youssef, 2015). Nevertheless, this significant decrease might be influenced by the repercussions of the COVID-19 pandemic's impact on the Egyptian economy.

Table 5

EDU 1.0 Vs. EDU 2.0

EDU 1.0	EDU 2.0
Some of education 2.0 interventions were implemented in other grades such as the computer-based assessments or secondary grades.	The Transformative comprehensive reform that changes the traditional educational system of memorization into a student-centered, competency-based, and technology-literate system.

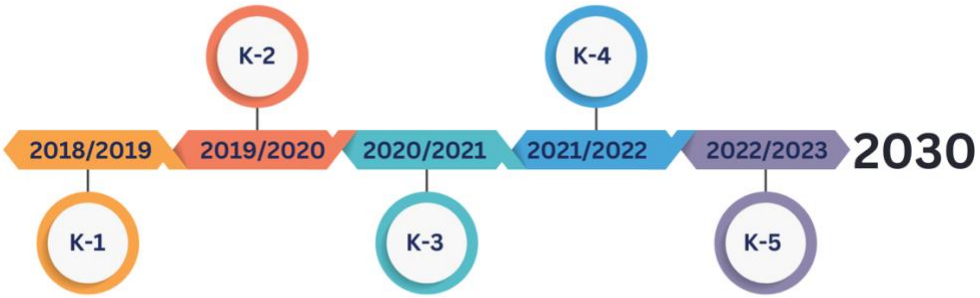
Source: Developed by the Researcher

Dr. Tarek Shawki declared that "The classic education system of Egypt had expired," and the Egyptian education system needs "to bring education back into the classroom" (as cited in Saavedra, 2019, para. 5). Consequently, the MOETE had four objectives for this project: Better quality accessible pre-primary education, strong continuous capacity-building programs for teachers and school leaders, high-end digital learning, and an equitable technology-enabled examination system (World Bank, 2019). The new educational reform with its two simultaneous tracks, EDU 1.0 and EDU 2.0, where EDU 2.0 were planned to be implemented gradually and reach its full implementation by 2030. The initial phase of EDU 2.0 targeted the pre-primary stage (KG1 and KG2) and early primary grades (grade 1) in 2018; each new academic year a new grade would be included until the full K-12 implementation is reached in 2030 (Mostafa et a., 2022). In parallel, EDU 1.0 offered some of the reform components, such as the secondary school electronic

evaluation and technology integration, so that all students in Egypt will be included in the reform until the full roll-out in 2030. The computer-based assessment was initially launched for grade 11 in 2019/2020 to enable students to take the test anywhere and access the digital content anywhere as a means to eradicate memorization. In addition, the Egyptian Knowledge Bank (EKB) was launched in 2016 as one of the largest online content libraries, including a massive number of publishers, to ensure that Egyptian students have access to the latest innovative digitized material.

Figure 2

EDU 2.0 Timeline



Source: Developed by the Researcher

Furthermore, EDU 2.0 digital component aimed to transform the curriculum into digital content providing students with devices that support these technology elements and computer-based tests (Saavedra, 2019). EDU 2.0 had several challenges to pave its path to success, including the inferior ICT infrastructure, teachers' poor digital capacities, and gaining parents' buy-in. Although the MOETE supplied 9,249 public schools with computer labs and 27,5000 classrooms with the needed hardware to become technology-enabled, Oxford Business Group (2017) reported

that those numbers represented only 16% of the total public Egyptian schools. Obviously, the MOETE's efforts to empower schools were insufficient to cover the huge number of schools in Egypt.

Upon comparing the old system to EDU 2.0 in Table 6, it is obvious that EDU 2.0 integrated different educational strategies to enhance the quality of education and solve the challenges of the old system. EDU 2.0 focused on eradicating memorization, encouraging the use of critical thinking skills, and embedding the application of the 21st-century skills. Instead of using the traditional educational pedagogies that were used in the old system, EDU 2.0 adopted updated innovative educational pedagogies such as project-based learning. EDU 2.0 is multidisciplinary, where the different subjects work together to deliver the knowledge and skills; for instance, students studying the circulatory system during their science session would have already studied the organ names in their vocabulary class during their English session. Finally, the old system suffered from the poor use of technology; however, EDU 2.0 offered a technology-enabled curriculum. The vast differences between the old system and EDU 2.0, alongside the innovative educational interventions offered, need to take a variety of factors upon EDU 2.0 implementation to cater to stakeholders' resistance to change.

Table 6

The Old System Vs. EDU 2.0

The Old System	EDU 2.0
Memorization	Critical Thinking
Traditional Educational Pedagogies	Recent Educational Pedagogies and Project-based Learning
Focused on one subject at a time	Multidisciplinary integrating different subjects together
Limited or no use of technology	Technology-enabled curriculum

Source: Developed by the Researcher

Not only should great efforts be exerted towards revamping the infrastructure and transforming the curricula, but also the engagement of the direct beneficiaries and front liners of the policy implementation was critical to reducing the extent of resistance to change and minimizing the effect of interest groups. In order to ensure the success of such aspiring reforms, a bottom-up approach should be adopted where all the stakeholders should be included, such as parents, teachers, and even students themselves.

Nevertheless, parents, teachers, and school leaders were suffering from a lack of communication in terms of MOETE tactical implementation steps; for instance, they were not informed of the release date of the new school textbooks in 2018 (Sharouda, 2020). Accordingly, they used Facebook and Whatsapp groups to share information and communicate about ambiguous processes during the academic year (Sharouda, 2020). On the other hand, there was a massive gap in the literature regarding assessing the parents' perception of EDU 2.0, where the literature only stated that it was a major challenge for EDU 2.0. The literature didn't state what MOETE had

planned to overcome this challenge and to handle parents' resistance to change and worries. Neither articles were found to assess parents' willingness to adopt EDU 2.0 before its implementation nor their feedback after the execution of the initial stages. Finally, the re-contextualization of such policies was paramount to ensure they fit the Egyptian context and ensure the acceptance of direct beneficiaries.

While Egypt had 1.3 million teachers in 50,000 schools (Saavedra, 2019), preparing them to deal with this level of technology adoption and gaining their endorsement were essential cornerstones for the success of EDU 2.0. Nevertheless, teachers suffered from several challenges, such as low salaries, insufficient capacity building, lack of digital literacy, high-class density, and a low number of teachers (Moustafa et al., 2022). Teachers have demanded salary raises for several years to meet international salary standards, and no change has happened regarding this issue; Hamdi (2019) stated that MOETE had declared their lack of capacity to take such a step (Moustafa et al., 2022). Moreover, in MPED (2018), there was a significant increase in class density, where the average number of students per class expanded from 42.7 in 2016/2017 to 43.7 in 2017/2018. With more than 40 students per class, the teaching process quality would be negatively influenced, affecting students' understanding and knowledge retention. In addition, it was identified by several scholars that teachers suffered from inadequate ICT skills. Furthermore, the World Bank (2018. p.3) claimed that the capacity-building programs offered by the MOETE were "(a) of poor quality, (b) ill-timed to when teachers need the training and support, and (c) usually one-off site training unconnected to teachers' specific needs or focused on isolated subject-matter content" (Marey, 2020). As a result, the MOETE professional development programs were not filling the gap and not supporting teachers to do their jobs. Therefore, teachers' professional development was one of the MOETE's objectives attributed to EDU 2.0, which shows that the MOETE recognized the

importance of teachers' roles and their vital contribution to EDU 2.0 success. EDU 2.0 had an expected result of training two million teachers and school leaders with a 35% improvement in their teaching skills (World Bank, 2019).

4.2. Teachers' Professional Development in Egypt

MOETE possessed a professional development program for teachers that included three days of training which was not effective or compatible with the new global digital transformation revolution (Moustafa et al., 2022). The MOETE's policies had always adopted the conventional top-down approach where teachers were not involved in the training programs. Marey (2020) described the professional development training as "hit-and-run" workshops which were boring, one-way, basic, not accompanied by coaching or mentoring, and with unprofessional trainers. He added that the MOETE's professional development was a mandatory requirement to get promoted, and that was the reason behind teachers' attendance because they thought it was a waste of time.

Accordingly, the MOETE had embarked on several attempts to enhance the quality and effectiveness of these professional development programs. One of those remarkable attempts was "Teachers First" initiative, which was launched in 2016. Teachers First was a partnership between MOETE and "Imagine Education" based on the UNESCO competency framework for teachers (Imagine Education, 2020). The program adopted the cascade format where the school principal recommended three teachers who attended the program and came back to school to establish a PD unit to train other school teachers. Teachers First (2020) stated that teachers were trained on innovative teaching pedagogies, ICT skills, 21st-century skills, and classroom management. They were also trained on developing their self, peer, and mentor assessment skills to establish a

community of practice. The program was launched before the official launch of EDU 2.0, and it came to an end in 2019 with the announcement of its goal fulfillment (Teachers First, 2020).

Another professional development program transformative attempt was the partnership with "Discovery Education," which was still running (Moustafa et al., 2022). The program started in 2018 and was also designed in a cascade model format where a Training of Trainers (ToT) was given in three days for teachers who became master trainers. The teachers went back to their schools to train other teachers and start a community of practice where teachers supported each other and scaffolded each other's learning process. Monitoring was provided by the MOETE and the Discovery Education team to ensure a smooth transition process. The Training Of Trainers' (TOT) prime goal was to train the teachers on EDU 2.0 new curriculum and the new competency-based framework.

4.3. Egypt Handling COVID-19 in Education

When the COVID-19 pandemic hit the world in early 2020, countries all over the world were forced to impose several strict measures to control its spread. Egypt was one of those countries that enforced a lockdown and closure of schools in March 2020. Accordingly, this expedited the implementation of the educational reform's digital component and "put the reform under a serious tryout" (Badran et al., 2021, p. 2). The issue of learning continuity became a prime concern for the MOETE; as a result, the MOETE was mindful to activate the digital component of the reform and invest more in the acceleration and implementation of digital tools. Although the EKB was already launched in 2016, the platform didn't include enough educational materials for all the grades because it focused on the first secondary and second secondary stages (Grades 10 and 11). Therefore, in four days, the EKB was equipped with diverse educational materials to cover all grades from KG1 to the third secondary; of course, the rapid execution resulted in several

glitches, which were handled once they were identified (El Zayat, 2020). In addition, MOETE partnered with a private company to get the license of the Edmodo platform to serve as a communication channel between students and teachers where lessons were held, research projects were submitted, and assignments were uploaded. Since Egypt suffered from a severe digital divide regarding infrastructure and internet accessibility, TV channels aired educational materials to students, and MOETE partnered with the Ministry of communication and information technology (MCIT) to offer students data SIM cards to secure their internet accessibility (Moustafa et al., 2022). Concerning the end-of-year assessments, all assessments were canceled, and students had to submit research projects instead either on the online platforms or physically at their schools which was another tactic by MOETE to try to overcome the digital divide. For the secondary stage students who were enrolled in the first and second secondary years, they had their exams on tablets which were previously distributed by the MOETE, while the third secondary year had their assessments in schools wearing masks (El Baradei, 2021). Finally, the MOETE declared that the school year starting in October 2020 would be shifted to a blended learning approach at all schools nationwide.

In conclusion, the legacy of the Egyptian educational reforms is extremely rich, and it is evident that there was always a struggle with the complex nature of Egypt. However, the MOETE's efforts to transform education did not show the expected results after the implementation of the past reform attempts. Furthermore, the innovative EDU 2.0 reform was a disruptive move taken by the Dr. Shawqi and his team during a critical time when the whole world was fighting a global crisis. The final impact of EDU 2.0 might need years to be detected and measured accurately, however, the current measures taken and their influence on the quality of education could be evaluated in order to mitigate any issues that might arise.

Chapter Five: Methodology

5. Methodology

This chapter explains the methodology followed by the research study by highlighting the study design, the study participants and how they were chosen, data collection and analysis approaches, the study limitations faced, and ethical considerations followed. Furthermore, the study's main goal is to assess Education 2.0 reform's effectiveness, find its policy gaps, and its influence on parents and teachers in Sohag, emphasize the positive aspects, and suggest future recommendations so that the upcoming execution years would be more impactful.

5.1. Research design

This study is an inductive study aiming to understand the effect of Education 2.0 reform's transformative measures on the teachers' performance in their classrooms and how they evaluate the shift in the academic level of their students. Besides, one of the main study goals is to explore the parents' experience with the new policies and their satisfaction with the new education quality provided.

With teachers being the most influential educational actors and implementing the reform's on-ground tactics, their skills and experience with EDU 2.0 must be explored and evaluated to estimate the change in education quality. Furthermore, parents being an important stakeholder in the education process would make their opinion an essential measure of EDU 2.0 reform effectiveness. In an attempt to understand MOETE's perspective and policy design methods, educational advisors who previously worked on EDU 2.0 were interviewed. The evaluation of such visionary educational transformation implications on a country as pivotal as Egypt will

definitely show interesting results, which might be beneficial for other educational transformation experiences in the region and other countries with similar politico-economic circumstances.

Qualitative methodology was used where one-on-one in-depth semi-structured individual interviews and focus groups were used as the data collection strategy to reach the study's aim; these techniques were selected to avoid participant bias. Qualitative methodology was selected because the researcher was trying to describe the details of the policy implementation process and find the gaps. Semi-structured in-depth interviews were the most suitable approach using elicitation tactics to understand more about the different perspectives of educational advisors, teachers, and parents regarding EDU 2.0. Moreover, it allowed starting with broad and probing questions and then narrowing them down to more specific questions following the new threads that were revealed during the interview, helping better understand the interviewees' opinions. The study followed a non-linear research path that matches its nature and has a better logic to answer the research questions (Neuman, 2014). In addition, both one-on-one interviews and focus groups were used to perform triangulation and ensure the data came from different points, strengthening the research claims in the end.

The researcher designed three interview guides for teachers, parents, and educational advisors; the interview guides comprised open-ended questions. The interview guides' questions were designed after the researcher's extensive literature review. The researcher started all the interviews with a simple introduction to the topic and building rapport by showing respect and appreciation for the interviewees' willingness to participate in the study. Then, General questions were asked about the topic, followed by probing questions to elaborate more on the mentioned points. The interviews were conducted in Arabic and then transcribed and translated into English language.

The selected research site is Sohag, a low-income governorate in Egypt that the World Bank defined as one of Egypt's poorest-income governorates (World bank, 2019). Sohag was chosen because the researcher wanted to explore how MOETE applied EDU 2.0 transformative reform in such a low-income community, how they tried to tackle the challenges of working in such a community, and to what extent they managed to gain teachers' and parents' buy-in and overcome hurdles to implementation. Additionally, the researcher had earlier worked in Sohag and had prior knowledge of the extent of people's readiness to change and the challenges that might face educational reforms there. The researcher's experience made her more curious to learn more about the education transformation and dig deeper into this issue. Additionally, having been to Sohag before and having professional relationships would facilitate the accessibility to teachers and parents.

5.2. Study participants

Twenty-nine participants were included in the interviews and focus groups. The researcher traveled to Sohag and spent three days visiting a poor village in Sohag to conduct individual interviews and focus groups. The village was chosen due to the accessibility of the researcher to reach the study participants. Twelve primary school teachers from Sohag's public schools, teaching the national curriculum (grade 1 to grade 5), were chosen to understand their viewpoint of Education 2.0. Six individual interviews were conducted either face-to-face or over Zoom. One focus group was conducted, and it comprised eight teachers. This distribution was made in order to fit their schedules and free time slots. Furthermore, all of the fourteen teachers interviewed were females. In addition, the individual interviews included two primary school teachers from a private school in Sohag teaching the national curriculum were interviewed via Zoom, while four primary public-school teachers were interviewed face-to-face. Teachers from private and public schools

were targeted to understand the difference between private and public schools' mitigation of the reform's course of action.

The snowballing technique was used where teachers helped the researcher by inviting other teachers for interviews, which expanded the research's credibility. Teachers' sample selection was based on some criteria, such as being a teacher in a primary school who taught the old national curriculum and was involved in teaching the new reformed EDU 2.0 curriculum. Teacher interview questions included different themes as follows: teachers' involvement in the policy design and implementation, the influence of the capacity-building training offered to them by MOETE, and the effect on students' engagement levels resulting from teachers' capacity-building training. The entry point was the researcher's past professional relationships with several teachers who attended a virtual course with her and her excellent relationship with the contact person who arranged the course and who possessed a vast network in Sohag with different schools and teachers.

On the other hand, the parents' experience with the new reform was of critical importance in assessing the reform. As a result, the researcher managed to schedule interviews with parents in Sohag through her contact point there. The snowballing technique was used once again to reach more parents to obtain more representative information on their experience. Ten parents were interviewed where seven parents were interviewed individually, and the remaining three parents were interviewed in a focus group. This distribution was to fit the parents' schedule and use triangulation to avoid bias where parents might affect each other's opinion.

In order to explore the topic further and understand more about EDU 2.0 reforms from the field, the researcher contacted two MOETE master trainers. The two MOETE master trainers were interviewed individually via Zoom; one was a male residing in Cairo and conducting trainings in different locations all over Egypt, while the other was a female located in Sohag and conducting

training in Upper Egypt. Their interviews helped the researcher understand the context of EDU 2.0 and plan her next steps in the field, as the literature articles were poor in understanding what was happening on-ground.

Table 7

Summary of the Interviews Conducted

Participant Name	Total numbers	Breakdown	Numbers
Sohag parents	10	Individual interviews	7
		Focus group (1)	3
Sohag Teachers	14	Individual interviews over Zoom (**Private schools**)	2
		Individual interviews in Sohag (**Public schools**)	4
		Focus groups (1)	8
Master Trainer/ Cairo	1		
Master Trainer/ Sohag	1		
Educational Experts' Data	Dr. Linda Herrera[2]	RDP project leader and responsible for the documentation of EDU 2.0 research data	
	Nelly ElZayat[3]	MOETE former advisor	
	Dr. Nawal Shalaby[4]	Former Director of Center for Curriculum and Instructional Materials Department (CCIMD)	

Source: Developed by the Researcher

[2] Dr. Herrera's consent was obtained to mention her name.
[3] Nelly's consent was obtained to mention her name.
[4] Dr. Shalaby's consent was obtained to mention her name.

At first, the researcher was planning to reach out to the MOETE officials to explore MOETE's strategy during the design and implementation phases of EDU 2.0 and their used techniques to gain teachers' and parents' endorsement. The initial plan was that one of them would work on the strategic level at MOETE, and the other would work in Sohag on-ground. The first one's purpose is to have an overview of MOETE's planning and perspective from a strategic level, while the second one was to explore the on-ground challenges. Although she made several attempts to reach different MOETE officials, she failed. Consequently, she decided to include educational consultants who were involved in the design and implementation of EDU 2.0. She contacted three educational experts and acquired their consent to mention their names in the study. She managed to contact Dr. Linda Herrera, who is a professor in the Department of Education Policy, Organization, and Leadership at the University of Illinois at Urbana-Champaign. Besides being an education policy advisor, Dr. Herrera was the director of the Education 2.0 Research and Documentation Project (RDP) from 2019 to 2021. She published various pieces of scientific research on Egyptian educational reforms since the 1990s, especially the public sector schools. Additionally, the researcher successfully interviewed Nelly ElZayat, who is the co-founder and director of Newton Education Services and served as an educational advisor to MOETE during the design and implementation of EDU 2.0. ElZayat published various scientific research papers and articles discussing EDU 2.0 reform in Egypt. Furthermore, the last educational advisor was Dr. Nawal Shalaby, the Former Director of the Center for Curriculum and Instructional Materials Department (CCIMD). She was responsible for the design of EDU 2.0 curriculum during her work as the director of CCIMD. Finally, the questions to the educational advisors were semi-structured, with themes as follows: How were the teachers involved in the policy design phase? Was there any follow-up during the implementation phase? What are the challenges that MOETE faced

during policy design and implementation? How was teachers' buy-in acquired? How did MOETE assess the policy implementation results so far? The researcher reached them through their contacts mentioned in their publications about EDU 2.0, and the interviews were conducted via Zoom and face-to-face.

5.2.3. Data collection and analysis

The data collection plan is based on two main tools: in-depth one-on-one interviews and focus groups, as stated before. Each interview took around one hour and was audio recorded upon the interviewee's approval and signing of the consent form, except one of the master trainers refused to record; as a result, the researcher took notes. The interview data were collected, transcribed, translated into English, and analyzed confidentially, being only accessible to the researcher and saved on a password-protected device. Finally, the data analysis plan was based on an Interpretative approach and coding.

Initially, the purpose of the study was to analyze the effectiveness of MOETE's professional development on teachers' digital competencies, which was conducted to prepare them for EDU 2.0 reform. However, upon exploring the field, she realized from the interviews that EDU 2.0 did not focus on teachers' ICT skills and that it was done by design, which was not mentioned in the literature. Accordingly, she shifted the study's scope to include the whole effect of the reform on teachers and parents, finding the gaps in policy design and policy implementation steps. In addition, it was not clear in the literature or from what was known about EDU 2.0 in the Egyptian community that the reform focused on KG-1, KG-1, and primary 5 (which was included in 2022). There was a misconception that EDU 2.0 included all the changes and digital transformation in K-12. Nevertheless, upon conducting interviews with the educational advisors, they stated clearly that the transformation was focused on KG-1, KG-1, and primary 5, and the plan was to include

other years one-by-one on an annual basis. Consequently, the researcher decided to focus on those years in her research, fieldwork, and in targeting teachers for interviews.

5.2.4. Limitations and Ethical considerations

Finally, limitations to this study were numerous due to the fact that study participants were members of a low-income marginalized community. As a result, a number of ethical considerations were implemented to guarantee their safety from any harm that might occur concerning their personal details and ensure their understanding of the study's implications. The most prominent limitation here was mainly related to interviewees refraining from participation, giving false data, interviewees' bias, or loss of contact and accessibility to them. A number of teachers refused to participate in the interviews being afraid of any harm that might be caused. Teachers who voluntarily participated were assured of the confidentiality of their data through the consent form enclosing their confidentiality and were debriefed properly to reassure their safeguarding and identity protection. Additionally, access to MOETE officials was a massive challenge alongside COVID-19 restrictions, unstable circumstances, and eventually the researcher failed to reach them. Another challenge was travelling to Sohag, which the researcher had to do on her own, but it was smooth due to the researcher's contacts there and her professional relationship with a non-profit organization located in Sohag, who were extremely supportive and helped her finish her fieldwork in only three days. Furthermore, the researcher observed participants' behaviors during the interview and did not impose any opinions and made sure to build trust and rapport. In addition, IRB approval was obtained to conduct the interviews and is attached in the appendices section.

Chapter Six: Findings and Discussion

6. Findings and Discussion

In order to answer the research questions, this chapter presents the findings of the focus groups and in-depth one-on-one semi-structured interviews grouped under different themes. Each theme included answers either to one research question, or more than one research question, or other generated findings that were not targeted by the research questions at the beginning of the study and were generated when the interviews were conducted. Most of the findings include the opinions of the three stakeholder groups: Sohagi teachers, Sohagi parents, and educational consultants. Parents shared their own experiences with EDU 2.0 reform as valuable stakeholders and teachers being the executors of the reform. On the other hand, educational consultants shared what the MOETE was planning as they were included in EDU 2.0 planning and implementation, and they were often asked to provide their personal evaluations. This structure helped explore each stakeholder group's opinion concerning the topic discussed and compare them against each other to acquire a comprehensive understanding of the reform from different perspectives. In addition, it facilitated the analysis for the reader and made it easier to detect points of intersections and disagreements.

The findings' themes are presented as follows:

Table 8

Findings' themes

Theme	Theme Title
Theme One	EDU 2.0 Reform Consensus
Theme Two	Teachers Professional Development
Theme Three	Parents Satisfaction

Source: Developed by the Researcher

6.1. Theme One: EDU 2.0 Reform Consensus

This theme answers the first research question of whether teachers' and parents' endorsement of EDU 2.0 was gained in Sohag prior to EDU 2.0 reform enforcement. Besides, it explores the process of gaining their endorsement before EDU 2.0 reform was launched and implemented. Teachers and parents were asked this question to explore their side of the story, while education consultants were requested to provide a glimpse of the MOETE's plan and tactics to reach parents and teachers based on their knowledge of EDU 2.0. Finally, the educational consultants were asked about their evaluation of the approaches followed by the MOETE.

6.1.1. Acquiring Sohagi Teachers' and Parents' Buy-in

Obtaining the main stakeholders' consensus was considered of prime importance for EDU 2 .0 adoption and success. Dr. Herrera claimed,

> One of the problems and maybe the reason Dr. Shawqi isn't there anymore as minister is that there wasn't enough buying or enough acceptance.

She continued saying that although Dr. Shawqi used to post about the reform on social media and give speeches on different talk shows, the public was confused. Dr. Shawqi was one of the ministers who tried to reach the public so that he could resolve any confusion and make things clear for them concerning EDU 2.0 reform policies and on-ground tactics. The Youtube website and Facebook social media platform include several videos and posts of Dr. Shawqi explaining the idea behind the reforms and explaining different tools and platforms launched by the MOETE. The findings below include some insights to show whether these actions taken by Dr. Shawqi worked in Sohag with parents and teachers and whether they matched Sohag's context.

A. Teachers' Buy-in

Both teachers from public and private schools in Sohag stated that the MOETE did not include them during the reform policies' design. No one from the MOETE contacted them to discuss their daily challenges or needs. The researcher observed that teachers did not see obtaining their opinion during the policy design phase as even necessary. Additionally, when teachers and parents were asked whether they used to watch Dr. Shawqi's speeches, they replied that they did not.

On the other hand, when ElZayat was asked whether the MOETE gained teachers' buy-in, she answered that

> MOETE planned to gain teachers' endorsement during the professional development training, which was considered an orientation on EDU 2.0 on-ground tactics and the launch of the implementation phase.

Moreover, Dr. Herrera pointed out that

> Acquiring teachers' consensus was a rough task that the MOETE realized from the beginning of EDU 2.0 planning phase. Egypt possesses a massive community of tutoring where teachers gain a substantial financial incentive; It was extremely difficult to gain their acceptance of a system that eradicates private lessons and made their parallel jobs difficult by offering free tutorials and resources on different platforms.

Consequently, the only tools used by the MOETE to reach out to teachers about EDU 2.0 and gain their acceptance were during EDU 2.0 capacity-building programs and Dr. Shawqi's speeches. Fighting this "Parallel Economy" of private tutoring, as Dr. Herrera named it, would require vigilant planning and massive efforts to change teachers' mindsets. In addition, alternative sources of revenue should be provided so that teachers would not be negatively affected by the reform implementation; this would boost their reform

adoption. Furthermore, the absence of empathy meetings with the teachers or surveys to understand their work environment and daily challenges. The results of such meetings or surveys would have helped better tailor EDU 2.0 policies and on-ground tactics; accordingly, not performing these activities might have undermined the reform's practicality. The reform practicality from teachers' viewpoints will be discussed later in this chapter.

Moreover, the MOETE's plan to gain the teacher's endorsement during EDU 2.0 capacity-building programs seems to have failed with the teachers. The MOETE was supposed to train master trainers who would train other teachers and obtain their endorsement. Unfortunately, teachers stated that they did not accept or fully understand the curriculum initially; the master trainers didn't fully understand it at the beginning, as well. It was confirmed by Fullan (2000) that due to teachers' significant role in reform implementation, policymakers should exert extensive efforts in acquiring their buy-in. In Sohag, the master trainers were supposed to cascade the new frameworks and tactics down to teachers besides gaining their buy-in. However, if the master trainers themselves did not fully understand the curriculum transformation or fully endorse the reform, how were they supposed to convey frameworks and tactics to the teachers and acquire their endorsement to secure EDU 2.0 reform's adoption?

Obtaining the teachers' buy-in is of supreme importance to secure their ownership of the reform tactics, which would affect their classroom performance and satisfaction levels of the reform. Moreover, ElZayat pointed out that MOETE knew that teachers were a huge challenge and changing the curriculum was not enough because, for the reform to succeed, a teacher that accepts and understands was needed. It is obvious that the MOETE

exerted some effort to do so either during EDU 2.0 professional development or by the minister himself through his speeches and social media posts. Not only did EDU 2.0 transformative reform need to transform the curriculum, but it also needed to transform the teachers' mindset. Unfortunately, the findings show that the MOETE's efforts in Sohag did not result in this expected transformation. In addition, Muricho and Chang'ach (2013) associated the failure of education reforms in Kenya with using top-down approaches and the exclusion of teachers during the reforms' design phase. In Sohag, using a top-down approach in the implementation of EDU 2.0 reform proved not to be the best method; a governorate with Sohag's circumstances needed a more tailored approach to match the teachers' mindsets and needs. For instance, Sahlberg (2011) endorsed Finland's reforms for providing a high degree of autonomy for teachers to tailor their teaching pedagogies according to their students' needs. Accordingly, decentralization and giving the teachers ownership to customize the instructional strategies to the environment, culture, and students was effective in Finland because teachers were the experts when it came to the best approach to fulfill their students' needs. Although Marey and Maged (2022) stated that the teachers' PD included a track for them to personalize their teaching strategies, teachers in Sohag did not mention that they had this privilege. Teachers were stuck with ambiguous policies that they struggled to understand and were unsuitable to Sohag's context. In addition, holding school administrations and teachers accountable was identified as extremely effective in Singapore to guarantee their commitment to the reforms (Hairon, 2022); this would have also secured teachers' buy-in to EDU 2.0 reform if it had been applied in Sohag.

B. Parents Buy-in

All of the interviewed parents stated that they were not involved in any meetings with the MOETE to gain their buy-in during the planning process or implementation. They were not asked about their feedback or received any messages from the MOETE. In addition, they highlighted that

> We were extremely confused during the first years of EDU 2.0 implementation because the MOETE's media announcements and conferences were ambiguous. The announcements were not clear, and most of the time was late.

Due to the MOETE's obscure announcements, parents created Whatsapp and Facebook groups to exchange information, which, unfortunately, was a channel for propagating rumors, as well. Those alternative communication channels' influence was strengthened by the fact that schoolbooks were always late whenever a new grade was included in EDU 2.0. At the same time, parents and teachers did not receive any updates after the school year began; parents turned to these groups to find any information available. Furthermore, when parents were asked about the media conferences and Dr. Shawqi's social media posts, they said they did not watch them because they had no time. They did not fully understand what was communicated in such conferences.

On the other hand, ElZayat stated that the MOETE identified parents as one of the biggest challenges since they started to design the reform. She explained that parents with children in the old system were more challenging than those with their first children joining schools. Parents who were used to a certain educational system that they knew and adapted to were expected to be more resistant. They would require more persuasion and be more critical of EDU 2.0 while comparing the two systems; they needed a change of mindset.

On the other hand, parents with their firstborn joining schools for the first time would be easier to gain their endorsement because they did not possess past experience and they had no expectations. Accordingly, the MOETE had a number of measures to curb the hurdles of parents' expectations and worries, such as the ones mentioned previously: media conferences and minister's speeches, and social media posts. In addition, MOETE collaborated with international partners to create parent guides to help educate the parents about EDU 2.0 reform and manage their expectations. During the time ElZayat was working as an advisor to the MOETE, the project was still in the planning phase, and she did not have an update regarding it at the time of the interview. The above-mentioned efforts show how the MOETE was attentive to the value of gaining parents' buy-in.

Dr. Herrera mentioned that "parents are one of the most powerful tools in Egypt;" their power was clear upon checking the tumult created on social media showing their opposition to EDU 2.0. EDU 2.0 created several changes, and without educating and preparing the parents, it resulted in confusion. As a result, parents' acceptance was impacted; there was not enough endorsement or understanding of the reform. Sharouda (2020) confirmed that parents were struggling to find information needed about the new curriculum (as cited in Moustafa et al., 2022). Moreover, Dr. Shalaby confirmed Dr. Herrera's input, stating that MOETE failed in social engagement, where they did not reach out to parents and acquire their endorsement. ElZayat (2022) emphasized that there was no clear strategic plan to reach parents and include them in EDU 2.0 reform (as cited in Moustafa et al., 2022). Additionally, multiple changes were happening inside the MOETE itself, yet more attention should have been paid to educating parents and tailoring tactics to reach them. Teachers required a mindset change, and it was likewise necessary to work

on changing the mindset of parents because parents' resistance usually undermined educational reform effectiveness (Tan, 2019).

6.2. Theme Two: Teachers' Professional Development

6.2.1. Policy and Implementation Gaps in Teachers' EDU 2.0 Professional Development

According to ElZayat, Dr. Shawqi asked his advisors to use a blank paper and dream of how they wanted to see the future of Education in Egypt; this was how they started planning for EDU 2.0. "Sky is the limit" was the MOETE's motto during the first stages of planning, and then they started to become more realistic when it came to the on-ground execution of EDU 2.0 policies. Additionally, ElZayat added that Dr. Shawqi believed there were several past attempts targeting Egypt's educational reforms that started as pilot trials and were destined for upscaling. However, they never passed the pilot phase and ended up being scattered unfinished attempts. As a result, he wanted EDU 2.0 to be implemented on a large scale so that the results would be significant, and the changes would be transformational. He claimed that Egypt had enough pilot phases, and it was time for an uprooting measure. One of EDU 2.0 key policies were targeted to prepare the teachers for the new direction. In order to prepare the teachers for the new educational philosophies imposed by EDU 2.0 reform, influence their mindset change, and obtain their endorsement, MOETE implemented several professional development trainings. The teachers' PD training's target was to empower senior teachers to become master trainers and propagate the message of EDU 2.0 among their fellow teachers at their local schools. On the other hand, Dr. Shalaby declared that the teachers' PD materials she checked were exceptional and tailored to alter the teachers' mindset and encourage their adoption of EDU 2.0. Furthermore, she indicated that

> The Center for Curriculum and Instructional Materials Department (CCIMD) developed teacher guides with detailed steps to support teachers in the planning and execution of their sessions. The teacher guides included several options to cater to different learning environments (indoors or outdoors) and different class sizes (small or big).

Thus, the MOETE tried to empower the teachers with different tools and equip them to deal with the challenges of EDU 2.0. It also provided them with training to adopt the new educational philosophies and influence their behavior change.

Consequently, senior teachers from Sohag were chosen by MOETE and trained through the teachers' PD program to become master trainers and were expected to return to the rest of the teachers at their schools in Sohag and train them to change their mindset and acquire their buy-in. EDU 2.0 was implemented in both public and private schools in Sohag; the teacher's PD was expected to be cascaded down to both types of schools. The researcher expected slight differences when assessing the influence of the training on both types of schools; however, there was a significant difference between the results in both contexts.

Firstly, for the private school teachers in Sohag, the PD timing was always unsuitable for their schedules, one of the teachers said, "the MOETE never checked the convenient time for PD." Teachers were informed of the PD time and had to abide by it because they did not have the privilege of choosing between different time slots. Additionally, the teachers' impression was that the "training was a waste of time" because they had already been using the educational philosophies and teaching methods delivered during the PD in their private schools for years. They identified the PD as "basic" and that it did not add much value to their skill set and experience. However, the teachers emphasized that the new curriculum was well-designed and based on legitimate educational philosophies. The new curriculum aimed to transform the old techniques of

memorization and promote critical thinking skills, besides equipping the students with 21st-century skills. Despite the impressive efforts exerted in designing the new curriculum, teachers faced challenges with the multidisciplinary nature of the curriculum. One topic of the curriculum would be integrated into different subjects by assigning different tasks to students applying the same concept in a manner relevant to each subject. For instance, the vocabulary in the English language curriculum would be extracted from a science curriculum lesson, and the English teachers must explain the meaning of each term to students. The English language teachers did not fully understand the scientific terms, and the science teachers were not sure of the correct pronunciation of the scientific terms. As a result, the private school administration asked the two teachers to sit together and share the knowledge so that everyone could easily convey the knowledge to students and achieve the learning objectives. The same approach was followed by the different subject teachers to ensure all teachers understood the different concepts, were able to transfer the required knowledge and skills effectively to students, and ensured students were not confused with different methods of explanation used by the teachers. Teachers saw this approach to teachers' community of practice as extremely effective and beneficial in delivering the curriculum and reaching the intended learning outcomes. Finally, teachers stated that the MOETE did not perform special monitoring and evaluation activities during EDU 2.0 implementation. There were no attempts to collect their feedback during the application of EDU 2.0 measures. The only monitoring teachers received where from their private school administration.

Secondly, the public school teachers in Sohag complained of the same issue as the private school teachers: improper PD timing that did not fit their schedules. They confirmed that no one had checked the appropriate time for their PD, and they were obliged to attend. On the other hand,

they stated that the PD was focused on understanding the philosophy behind EDU 2.0; however, it did not support the implementation inside the classrooms. They claimed that

> The PD that was provided to us was theoretical and did not consider preparing us for the execution of our daily job activities.

That was frustrating to the teachers because they felt they needed further support. Moreover, Sohagi teachers declared that they did not fully understand how to apply EDU 2.0 philosophy inside the classrooms; as a result, they turned to the senior teachers who became master trainers after receiving EDU 2.0 PD, and it was not helpful. It was obvious that master trainers did not fully understand the curriculum execution. Master trainers often did not have answers to teachers' questions. Furthermore, teachers were dissatisfied with the fact that the multidisciplinary curriculum was challenging, and the teachers' guides were not efficient in dealing with that. In order to facilitate the implementation of the EDU 2.0 multidisciplinary curriculum, there must have been an "alignment between different subjects which is hard to reach." Finally, there was a discrepancy between teachers' statements when they were asked about the MOETE monitoring and follow-up of EDU 2.0 implementation. A number of teachers said that there was no M&E done by the MOETE after the new direction kickstarted, while other teachers claimed that there were some monitoring activities. Finally, there were no efforts to gather teachers' feedback after the implementation of EDU 2.0 policies.

On the other hand, there was a peculiar conflict between teachers' opinions and educational consultants in terms of "Discover" curriculum. Teachers said that "Discover" was a curriculum for enrichment and not a core curriculum for the early primary grades. In contrast, Dr. Shalaby confirmed,

> Discover curriculum is extremely important. It is a critical foundation to prepare students for the science and mathematics curriculum that they would study starting in the 4th primary grade.

It was evident from the contradicting inputs of Dr. Shalaby and Sohagi teachers that teachers did not fully understand the purpose of the "Discover" curriculum, which was reflected in their execution at schools. A teacher stated, "Any available teacher would deliver Discover sessions; there was no dedicated teacher for it." Since teachers were already overwhelmed with the high number of sessions per day and a limited number of teachers to cover them, the "Discover" curriculum was a huge burden. However, Dr. Shalaby claimed that she received feedback from parents saying that they noticed their children who studied "Discover" curriculum before reaching the 4th primary grade were performing better academically when compared to their older children who did not study it.

Although the MOETE established teachers' communities of practice during "Discovery Education" PD (Moustafa et al., 2022), it seems the MOETE did not provide enough support it during its implementation. Nevertheless, teachers 'communities of practice showed significant benefits when applied in Sohagi private schools. Moreover, Ryan et al. (2009) reported positive results when China launched its teachers' community of practice. The idea behind the multidisciplinary curriculum was visionary and impactful based on the private schools' experience, yet the MOETE needed to design special methods to prepare the teachers for it. In addition, the obvious confusion about the objectives of the "Discover" curriculum raised several concerns about how the purpose behind it was communicated to teachers. Besides, failure to make sure master trainers understood EDU 2.0 philosophy and were ready for the implementation had slowed down the process of gaining teachers' consensus. Teachers were lost, and master trainers could not offer the needed support. Although Dr. Shalaby emphasized that teachers' guides prepared by CCIMD

were detailed and considered several teacher's challenges, teachers did not feel it was enough to equip them for EDU 2.0 implementation. On the other hand, a simple act of making the teachers feel included would have been to consider their preferable PD times and their suitability to their schedules. The MOETE did not consider this during the planning of teachers' PD, and the fact that the PD was compulsory might have backfired because they felt their preferences were not taken into consideration. Lastly, feedback channels were not provided to gather teachers' feedback and provide support if needed. That was another thing to reinforce the teachers' feeling that their opinion was not of prime importance to the MOETE. As per Dr. ElZayat, one of the main goals of the teachers' PD was to gain teachers' support for EDU 2.0 but based on the teachers' input, it was not successful in acquiring their buy-in, helping them understand the philosophy of the important "Discover" curriculum, or empower them with tools for EDU 2.0 application in classrooms. Akkary (2014) mentioned that embracing Western systems in education reform, in addition, to top-down approaches followed in the MENA region, failed in reaching the required goals and ended up with the augmentation of teachers' feeling of being excluded. Thus, MOETE's top-down policies in Sohag failed to achieve the required results in public schools, and the execution of the different activities to gain teachers' buy-in had negative effects. The researcher believes if EDU 2.0 policies were implemented following a decentralized approach and tailored to each area's needs, it might have been easier to tailor specific measures to each environment's requirements and would have achieved better outcomes.

6.2.2. EDU 2.0 Teachers' Assessment of their performance inside their classrooms and its effect on students' academic levels

Both the public and private school teachers in Sohag were pleased with EDU 2.0 new curriculum and approaches. Teachers have stated that EDU 2.0 adopted top-notch educational

strategies focusing on shaping the mindsets of students and developing their thinking skills. Higher-order thinking was vastly applied in different parts of the curriculum and integrated within different subjects. Teachers have confirmed that "the new educational pedagogies adopted by EDU 2.0 were "transforming Egyptian education from the typical memorization strategy into raising independent learners who understand the concepts beyond the knowledge being taught." Teachers expressed that they could notice the change in students' level of understanding and depth of their comprehension when they applied the new methods. It was obvious during the interviews that the MOETE had successfully reached its goal in designing EDU 2.0 educational strategies; however, the question remains whether the success extended to the implementation in Sohag.

On the one hand, the private school teachers in Sohag had positive feedback concerning EDU 2.0 educational strategy and revolutionary curriculum. The new vision of EDU 2.0 was perfectly fitting with the methods they already use daily inside their classroom, focusing on student-centeredness and students being independent learners. Moreover, private school teachers had the tools they needed provided by their schools; for example, their classes were technology-enabled, and they received a number of trainings on different ways to make their classrooms interactive and student-centered. Their schools' administrations were supportive; they were encouraged to use project-based and experiential learning, and the school pushed them to challenge their students out of their comfort zone. Besides, school administrations were closely following up on the challenges they faced daily in order to provide the support needed. In accordance, when EDU 2.0 was launched and the teachers faced some challenges regarding the multidisciplinary curriculum integration, the administration scheduled workshops so that teachers would cooperate together to reach the best course of action for the best execution of the new curriculum and guarantee that the intended learning outcomes were fulfilled for each subject. Nevertheless, private

school teachers in Sohag complained of the “extremely long curriculum” where they had a shorter period of time to finish it. They noted that “the curriculum was demanding and distinctly long, which required a longer period of time,” however, the term period remained the same. As a result, they had to skim through the rest of the curriculum to ensure students had knowledge of all the curriculum lessons. Overall, private school teachers' experience with EDU 2.0 was positive, except for the challenge related to huge curricula in different subjects.

On the other hand, the public-school teachers confirmed that EDU 2.0 educational pedagogies focused on the students’ thinking skills rather than memorization. EDU 2.0 offered the teachers several educational frameworks and activities that could support them in conveying information in a learner-centered manner. One of the Mathematics teachers who was teaching grade 3 said that “students were waiting for the mathematics class, and that never happened before.” She said the approaches fostered in EDU 2.0 transformed Mathematics into a fun subject while it was tough for students in the old system. For instance, the mathematics teacher stated that

> Using the old system, I would have kept repeating the multiplication table multiple times so that the students would memorize it; however, they would not understand the concept behind two times two equals four, yet with EDU 2.0, students would hop two times for two rounds so that they would understand why the answer is four.

The mathematics teacher was so proud of the deep understanding her students had reached compared to her older students; in addition, she noticed a huge change in her performance inside the classroom. All the public-school teachers of various subjects agreed that the ground-breaking educational philosophy behind EDU 2.0 was visionary and destined to achieve the desired outcomes.

In spite of the public teachers' positive evaluation of EDU 2.0, they suffered from several hurdles during the implementation of EDU 2.0 techniques and activities. Public school teachers claimed that they were under-resourced and their classrooms were not technology enabled; the classrooms did not include smart boards or data show devices. One of the teachers said that "the curriculum includes videos that I want to show to my students, yet, I only have my mobile phone with internet, and it is impractical to use it with the seventy students in my classroom." The other available option was to take the students to the computer lab to watch the videos, and this was also impractical as they stated that they "do not have enough computer devices to match the students' number;" the classroom includes more than seventy students while the computers lab only had ten computers. Not only were the classrooms under-resourced, but also the computer laboratories were not equipped with enough devices to match the students' numbers and there were no smart interactive boards installed inside the classrooms to support the activities' execution. Consequently, even if they managed to bring the students there, students would not be able to experience the learning journey. Teachers have also pointed out that moving seventy students from the classroom to the computer laboratory would entail wasting the session's time that they were in dire need of in order to finish the long curriculum.

Obviously, the classrooms were overcrowded with more than seventy students, and this affected the teachers' performance. Teachers have indicated that the overcrowded classrooms were a massive daily challenge, making it difficult for them to implement EDU 2.0 on-ground tactics effectively. They said, "Most of my energy is wasted in trying to keep the classroom quiet enough so that I can start working," she continued saying, "I hoped that the MOETE's teachers' training would have equipped us to deal with this." They said that the teachers' PD focused on conveying the educational philosophy, and for them, it was not enough because they needed further support

with their daily challenges. Despite teachers expressing their contentment with the activities and project-based learning methods used in EDU 2.0 curricula, they noted that the activities and projects needed materials to be implemented. In Sohag, parents could not provide that, and the schools were not equipped with such materials. As a result, teachers bought the materials out of their own pockets to ensure the projects were carried out and the intended learning outcomes were achieved. Paying for the materials would impose a huge financial burden on the teachers because they have poor financial status, and their salaries would not cover such costs. “The curriculum mentions that we use materials from the environment around us, so I go and buy colored paper and other needed materials from the nearest book store,” that was the explanation of a science teacher clarifying the reason behind the financial burden she was suffering from. Another teacher said, "I am happy to execute all the activities from the books inside my classroom, but I need the resources which would empower me to do this.”

Furthermore, public school teachers pointed out that they suffered a lot from understanding the curriculum at first and the philosophy behind it; it took them a long time to get used to it. Parents used to call them to ask questions about certain parts of the curriculum that they did not understand; unfortunately, teachers faced trouble understanding some sections, as well. When teachers went to the master trainers seeking their support, they usually had no answers. Teachers kept trying and researching until they could deal with the new curriculum and find ways to teach it.

Moreover, according to ElZayat, the MOETE identified overcrowded classrooms as one of the massive challenges ahead of EDU 2.0. Accordingly, Dr. Shalaby has declared that one of the MOETE’s solutions was to empower the teachers’ guides, including different activities tailored to various learning environments and classroom capacities. The activities could be implemented with

diverse approaches that are suitable for overcrowded classrooms, reasonable capacity classrooms, indoors or outdoors. The offered flexibility aimed to equip teachers with a toolkit to support them in different situations that they might face inside the classroom. Additionally, Dr. Shalaby confirmed that

> At CCIMD, we realized that 4th and 5th primary curricula were too long compared to the duration available for them, so we have modified the curriculum of 4th primary to become more suitable for the school year duration.

It showed that CCIMD reacted promptly when they received feedback from the ground regarding the curricula. Furthermore, Dr. Shalaby has pointed out that she was: "So proud of the detailed teachers' guides that CCIMD offered teachers because they included a variety of tools to support them in different contexts." She added that CCIMD embarked upon the launch of different workshops all over Egypt to make they could support teachers during EDU 2.0 implementation; however, she pointed out that they were not able to reach everyone, and they were planning to conduct more workshops before she left her position. Finally, ElZayat declared that digital tools were not vastly used for the primary stage so that the students would have more contact with their teachers. It was marketed in the mass media that schools were equipped with digital tools to support teachers during EDU 2.0 implementation.

Despite both public and private school teachers in Sohag having positive viewpoints toward EDU 2.0, the experience took different courses of action in each type of school. Clearly, the support provided to teachers by the private school administrations made it easier for them to deal with the several challenges of EDU 2.0. Besides, the resources offered to the private school teachers and the insightful leadership that pushed them to collaborate were among the success factors of EDU 2.0 in private schools. On the other hand, the public-school teachers were neither

provided with the same support nor prepared to perform without it by the MOETE. Apparently, the MOETE tried to provide support as much as possible through the teachers' guides, CCIMD workshops, and the teachers' PD; unfortunately, according to the teachers' feedback, it was not enough. More efforts should have been made to change the teachers' mindsets; the top-down approach did not succeed in doing that. Preparing teachers with a high degree of qualifications was an essential factor for the reform's success, which was highlighted by Malinen et al. (2012), analyzing the reasons behind Finland's effective educational reforms. Moreover, Sahlberg (2010) reassured that the high level of decentralization applied in Finland instead of using top-down approaches was a significant factor in the reform's effectiveness. According to the teachers' opinions, both factors did not exist in Sohag. Asking teachers who have been working for years with certain tools and tactics to use materials from the environment did not work; their minds could not identify which materials in the environment they could use. Consequently, they bought materials from bookstores and suffered a financial burden. Furthermore, teachers were still complaining about the overcrowded classes and the fact that some curriculum sections were unclear to them. However, the MOETE provided detailed diversified, and resourceful teachers' guides, which meant that a gap needed to be identified. In addition, teachers criticized the long curriculum even after CCIMD modified it to accommodate their needs and academic calendar. Finally, during the first period of EDU 2.0 implementation, a huge campaign discussed how the MOETE had empowered schools to become technology-enabled; however, teachers still complained about it. Consequently, further investigation is needed here to detect the root causes of these issues. On the other hand, providing teachers with a high degree of autonomy where they could personalize their curriculum according to their culture and students' needs was effective in Finland and inspired a higher degree of ownership (Sahlberg, 2011); this could be tailored to Sohag

where teachers can choose suitable approaches for their instruction. Finally, the initiation of effective teachers' communities of practices generated positive results in China (Ryan et al., 2009) and Singapore (Ng, 2008), which could have been established in Sohag and would have been effective in public schools since it was a success in private ones.

6.3. Theme Three: Parents' satisfaction

6.3.1. Parents' Evaluation of the education quality after the implementation of EDU 2.0 reform

Parents being one of the critical stakeholders in the implementation of EDU 2.0 direction, as pointed out by ElZayat, their feedback about EDU 2.0 experience was of prime importance. The researcher did not conduct interviews with parents of children enrolled at private schools, but all the parents' interviews were conducted with parents with children enrolled at public schools. All the interviewed parents claimed that the curricula are "too long" compared to the previous years in the old system. Ideally, Sohagi parents used to help their children explain the unclear sections they find hard to understand in the different subjects; however, after EDU 2.0, parents complained about the obscure curricula. Parents could not comprehend EDU 2.0 curricula and techniques, which confused them. One of the parents said:

> My son came to me asking to do some research on the internet in order to understand a concept he could not grasp in science. I do not have a smartphone and cannot afford one to help him in his studies.

Accordingly, parents' inability to support their children neither by explaining unclear curricula sections nor by buying them smartphones was frustrating. It was not only financially overwhelming, but also a number of parents refused to grant their children internet access because

it was one of their rules. Parents believed internet access to their children meant wasting their time on games, and it was unsafe when they could not monitor what they navigate. Furthermore, parents did not know enough about the other solutions the MOETE provided besides the internet, which was "Madrasetna" channels. "The signal is weak in our village, it is inaccessible, and we cannot watch it," was one of the parent's answers when she was asked about "Madrasetna" channel. Thus, parents were frustrated with EDU 2.0, which they saw as unclear; their children's requests for smartphones were financially overwhelming, and "Madrasetna" channel was not an effective solution to their challenges. On the other hand, several parents attributed the unclear sections of the curricula to the following:

> Teachers are not explaining these sections properly.
>
> I am not sure whether it was due to teachers' incompetence or not.
>
> Teachers do not explain anything at school.

This resulted in their children going back home and asking for parents' support they cannot provide; consequently, they became frustrated with the reform. Moreover, parents were losing faith in the educational system, and one of them said, "I feel like my children are not getting an education at all." They attributed this feeling to the fact that there was no "homework or tests" during the early primary years, which was a new educational tactic adopted by EDU 2.0. It was a new approach to parents that they did not understand and reinforced their doubts about the new system of EDU 2.0. As a result of parents' fear, they started withdrawing their children from the regular EDU 2.0 system and enrolling them in the Azhari educational system. The Azhari system is harder, and "typically parents used to transfer their children from the Azhari system to the regular public schools' system," which was now known as EDU 2.0 after the reform was

implemented. Nevertheless, a parent claimed that when she used to visit the students' transfer office, she would find a couple of parents transferring their children to the Azhari system, but the last time she visited the office, there were more than 300 parents there applying for the transfer. Besides, parents explained that the Azhari system was financially more affordable than the regular EDU 2.0 because they did not have to pay for books or school clothing, which was an important factor for Sohagi parents because most of them have poor financial status. Furthermore, parents started to express their worry about this new trend; they knew the Azahri system was hard, and their children might fail there. "This new trend might end up with a failing student from Azhari systems dropping out from schools," said one of the parents, demonstrating her fear of the increase in students' drop-out rates elaborating that parents might do that to ask their children to help them at work and financially support their families, as well. In addition, when the researcher asked parents whether they used to watch Dr. Shawqi's speeches to understand more about EDU 2.0, they all answered, saying, "No." Finally, parents' inability to understand EDU 2.0 approaches greatly impacted their decisions concerning their children's educational system or even on staying at school.

Surprisingly, according to ElZayat, MOETE had recognized parents as an important driver to the success of EDU 2.0 and a great challenge. She elaborated that the MOETE identified parents of firstborns entering EDU 2.0 as being easier to handle than parents with children in the old system who were resistant to change. Consequently, the MOETE was preparing parents' guides to help parents understand the philosophy behind EDU 2.0. Dr. Shawqi was engaged in different talk shows and mass media specs to explain the new system. Nevertheless, Dr. Shalaby said the MOETE failed in social engagement and could not reach out to the parents properly. Moreover, Dr. Herrera suggested that a door-to-door campaign would have worked with parents and might

have increased social engagement. Finally, Dr. Shalaby said that a parent had called her and claimed she could see the difference between the mindset of her older kids and younger kids, where the younger ones who were enrolled in EDU 2.0 had better thinking skills. The researcher believed this feedback must not be applied to Sohag because Sohag is influenced by several factors different than other areas in Egypt. Thus, the MOETE pinpointed that parents were a challenge and devised a number of interventions to support them.

Despite the MOETE's efforts to offer parents a smooth transition from the old educational system to EDU 2.0, parents were frustrated with the new system. Moreover, the World Bank (2008) identified parents' satisfaction as an essential factor for the educational reforms' success; this meant that parents' dissatisfaction undermined EDU 2.0 effectiveness in Sohag. However, the MOETE's interventions did not deliver the expected results because they did not take into consideration the socio-economic status and behavioral patterns of parents in Sohag. Those different factors should have been studied before EDU 2.0 was implemented, and the MOETE should have been ready with contingency plans to handle it. Furthermore, the parents' frustration was multi-faceted, having financial, personal, and familial aspects. Based on their frustrations, they made disruptive decisions out of fear that their children were receiving poor-quality education. Their fear was justifiable because they did not find any comforting activity they could relate to done by the MOETE. Thus, EDU 2.0 aimed to improve the quality of education provided to Egyptian students; unfortunately, in Sohag, it was feared that it might become a driver for boosting the students' drop-out rates there. Nevertheless, in Finland, the Finnish MOETE's efforts for parents' inclusion which was done during the reform's implementation, resulted in positive outcomes when parents trusted schools and teachers and eventually started collaborating with them to enhance education quality (Sahlberg, 2011). Consequently, parents' inclusion in Sohag during

the reform's design or implementation would have uprooted their fears and guaranteed their children staying in EDU 2.0 system. In addition to securing their support for teachers and schools, which would have contributed to EDU 2.0 reform's adoption and effectiveness in Sohag.

Chapter Seven: Conclusion and Recommendations

7. Conclusion and Recommendations

This chapter wraps up the thesis by presenting the conclusion section summarizing the most significant insights derived from the different chapters; in addition to proposing policy recommendations to enhance the effectiveness of EDU 2.0 in Sohag. These policy recommendations were inspired by the literature, case studies, fieldwork, and researcher's experience. Finally, the chapter ends by suggesting areas for further research to understand deeper the areas not explored by this study.

7.1. Conclusion

This research study focused on evaluating the effectiveness of Egypt's EDU 2.0 reforms in Sohag governorate. Egypt struggled with poor-quality education for several years; as a result, the MOETE launched numerous educational reforms to rectify this situation. Although the MOETE followed diverse approaches and partnered with several international partners, Egyptian students scored low TIMMS and PIRLS rankings among their peers in other countries. Due to the failure of the previous educational reforms, Egypt initiated a national strategy aligned with Egypt's vision 2030 and UNSDGs known as EDU 2.0 education reform in 2018, led by the former minister of education, Dr. Tariq Shawqi. EDU 2.0 is a multidisciplinary, student-centered, competency-based reform coupled with a transformative curriculum. It aims to enhance Egyptian students' higher-order thinking skills and equip them with 21st-century skills.

Twenty-Nine interviews were conducted with different stakeholder groups in Sohag to capture their perception of EDU 2.0. Sixteen teachers from private and public schools and ten parents were interviewed from Sohag governorate to identify their opinions of EDU 2.0's effect on education quality. They were asked about whether the MOETE gained their endorsement on EDU 2.0 reform, teachers' viewpoint on the gap between EDU 2.0 policies and its implementation,

teachers' assessment of the influence of PD on their performance inside their classrooms, and parents' satisfaction with EDU 2.0 influence of the quality of education. In addition, three educational advisors who worked on the design, implementation, and documentation of EDU 2.0 were interviewed to gain their viewpoints on EDU 2.0. Moreover, Sohag was chosen because it is one of the poorest governorates in Egypt and one of the disadvantaged regarding government's public spending. The researcher was intrigued to explore the approaches followed there to apply EDU 2.0 in Sohag's schools and how the MOETE supported the teachers during the execution phase.

Throughout the extensive literature review research, the researcher identified different themes to explore different components of educational reforms. The researcher examined the significant influence of educational reforms on nations' economic development alongside the challenges faced by governments during implementation. Additionally, case studies from China, Finland, and Singapore were investigated to highlight their successes and failures. Moreover, the positive influence of stakeholders' inclusion, such as teachers and parents, was discussed. Furthermore, the Egyptian situation concerning education reforms was explored, featuring the status of Sohag governorate.

The research findings were organized and aligned with the research questions, where the first two themes included two research questions, and the third theme answered the last research question. The first findings theme was about the teachers' and parents' consensus concerning EDU 2.0 reforms. The MOETE identified the importance of stakeholders' involvement during EDU 2.0 planning; however, the MOETE involved neither the teachers nor parents during EDU 2.0 reform's design phase. Although the MOETE made several efforts, especially Dr. Shawqi's social media posts and conference, both parents and teachers in Sohag did not feel included. For the teachers,

the MOETE planned to start the process of gaining teachers' buy-in during the training of the master trainers; then, it would be the master trainers' job to acquire teachers' buy-in, alongside preparing them to implement EDU 2.0's curriculum and educational pedagogies. Sohagi teachers complained about the master trainers' knowledge levels because they did not have answers to their questions and had several challenges with EDU 2.0 instructional approaches and curriculum. It was obvious that the master trainers failed to gain teachers' endorsement of EDU 2.0 reform.

On the other hand, Sohagi parents struggled with finding information about EDU 2.0 reforms, which created room for following social media rumors. Moreover, the MOETE's delay in delivering books at the beginning of each school year augmented their attachment to fake social media posts because they were in dire need to find information about EDU 2.0 on-ground activities that would influence their children. They did not follow the minister's social media posts nor the MOETE's conferences for the announcements. It was clear that the MOETE's efforts failed to achieve the required results in gaining parents' consensus.

The second theme discussed the teachers' professional development programs where the gaps between the policies and implementation were explored, in addition to the teacher's evaluation of their performance after attending the PD. Sohagi teachers agreed that EDU 2.0 curriculum was revolutionary and encouraged students to think critically and quit the traditional memorization approaches focusing on project-based learning. However, the teachers complained about some parts of the curriculum that were unclear to them, and the master trainers could not support them in understanding these parts. The master trainers faced challenges where the PD dates were inconvenient for their schedules. Nevertheless, private schools' administrators decided to initiate a teachers' community of practice so that teachers would support each other in planning for the multidisciplinary curriculum of EDU 2.0, and it was a success. Private school teachers also

received support from their schools, which prepared them with all the resources needed to execute EDU 2.0 educational pedagogies in an effective manner. However, public school teachers struggled with the multidisciplinary curriculum without effective support from the MOETE. In addition, they suffered from the lack of resources during lesson preparation and had to buy them out of their pockets. Sohagi public school teachers mentioned that the execution of EDU 2.0 educational strategies inside their overcrowded classes was extremely difficult. On the other hand, the MOETE's advisors stated that the teachers were provided with diversified teacher guides that included flexible tools to support them during the implementation in different environments with different classroom capacities. Nevertheless, the teachers stated that the guides were not effective.

The last theme explored Sohag parents' satisfaction with EDU 2.0 and their perception of education quality after its implementation. The MOETE recognized that parents were essential stakeholders in EDU 2.0 reform's success; however, Sohag's parents were not satisfied with the reform results. They complained that they felt their children were not receiving proper education and attributed this to the improper explanation of teachers. They could not understand or relate to the new EDU 2.0 educational approaches. The MOETE'S efforts did not seem to convince parents of the new methodologies.

Moreover, they used to support their children in studying in the old system; however, they could not do that when EDU 2.0 was launched. Their poor socioeconomic status prevented them from providing their children with smartphones or laptops so that they could do their research and accommodate EDU 2.0 requirements. Their inability to support their children augmented their resistance toward EDU 2.0, resulting in losing their trust and belief in EDU 2.0. Consequently, a significant number of parents were transferring their children to the Azhari education system, which was more difficult when compared to EDU 2.0 system. Parents expressed their fears that

students often fail the Azhari system, which might push parents to withdraw their children from the Azhari system, which would increase the drop-out rates in Sohag.

To conclude, MOETE's efforts to execute EDU 2.0 reform in Sohag in order to raise the quality of education did not deliver the required results from the perspectives of teachers and parents. Teachers were facing numerous challenges and did not find the needed support from MOETE, and the planned MOETE interventions, for instance, the teachers' guides, training of the master trainers, and teachers' communities of practice were not effective. Moreover, there were discrepancies between teachers' and MOETE's perceptions of some interventions, such as the "Discover" curriculum, where Sohagi teachers thought it was just for enrichment while MOETE released it to be a foundation for lower primary grades. In addition, Sohagi parents were disappointed with the reform and did not understand its philosophy to an extent that drove them to take disruptive decisions like transferring their children from EDU 2.0 system to the Azhari system or even withdrawing them from the whole education system. Thus, EDU 2.0's execution in Sohag's public and private schools (grade 1 – grade 5) would be considered ineffective.

7.2. Policy Recommendations

The following recommendations were developed through the literature review's extensive research, the educational advisors' interviews, and the researcher's experience.

A. **Teachers' PD:** Teachers' Professional Development should be tailored to Sohag and other rural areas. It should focus on reshaping their mindsets to influence behavioral change. It should take into consideration their available resources, and they should be empowered with tools to help them become innovative in using materials in their environment. They should be able to think critically so that they can teach their students to become critical thinkers and self-learners; this will empower them to apply the reform policies effectively. Moreover, in Finland, the policymakers paid huge attention to the teacher's education and training, so being a teacher in Finland became extremely competitive and required a fine set of skills and qualifications. Accordingly, empowering teachers was critical to the educational reform's success.

B. **Teachers' Community of Practice:** Teachers' community of practice might be a great tool to support teachers, and it showed positive results when used in Finland and China. In addition, when it was applied proactively in sohag's private schools, it showed impressive results. It should be reinforced so that teachers can apply EDU 2.0 multidisciplinary curriculum effectively upon establishing communication between teachers of different subjects. In addition, the MOETE planned to establish teachers' communities of practice through the professional development training provided by "Discovery Education," its

failure in Sohag should be investigated so that it could be taken into consideration while planning for mitigations.

C. **Decentralization of schools and teachers' autonomy:** Decentralization of schools and enforcing teachers' autonomy showed positive results in holding teachers accountable for students learning in China and Singapore; it showed enhanced reform adoption in Singapore. Moreover, it would offer teachers the freedom to tailor the curriculum toward their students' needs. Eliminating the idea of "one-size-fits-all" was highly needed in schools of underserved communities; that was clearly seen in the difference between the private and public-school teachers' performance. Although EDU 2.0 followed top-down approaches where teachers were involved during the design phase, giving them the power of autonomy would induce the feeling of accountability and would promote their adoption. Additionally, personalizing EDU 2.0 pedagogies to their students' needs would improve students' performance, manifesting EDU 2.0 effectiveness and success. Eventually, this would foster parents' trust in the system and might undermine the idea of transferring their children to other systems or withdrawing them from schools.

D. **Classroom Capacity and Readiness:** The classroom capacity to teachers ratio should be relevant in order to secure teachers' good performance. Teachers complained about this factor because it impacted their performance negatively. They could not tend to the students' different needs in class capacities that might reach more than seventy students.

Accordingly, more schools and classrooms should be established to solve this critical challenge. In addition, classrooms should be prepared to support EDU 2.0 requirements, where teachers complained that classrooms do not include the required hardware to teach effectively. Computer labs were not enough to support the teachers in applying EDU 2.0 educational strategies; consequently, each classroom should be technology-enabled.

E. **Parents' Endorsement:** Parents' Endorsement and engaging them with teachers guarantees their buy-in and understanding, which was the case in Singapore. In Sohag, community engagement should be personalized to fit the parents' mindsets and their poor socioeconomic status. In Sohag, parents need to understand what their children are receiving at school, or else they might make disruptive decisions; as a result, their buy-in is extremely important. It is not enough to acquire their consensus; teachers should follow up with parents to ensure they are aligned. Involving parents in China with schools positively impacted the adoption of educational reforms, which could be the case in Sohag since their lack of awareness resulted in unfavorable outcomes.

F. **Mass media and door-to-door campaigns:** Mass media and door-to-door campaigns might be a good intervention to educate the community in Sohag, which was inspired by one of the interviewed education consultants. People must understand EDU 2.0 philosophy, and MOETE's efforts were ineffective in tackling this issue. Launching mass media and door-to-door campaigns means talking to everyone in person, making sure they understand, answering their questions, and ensuring they feel important.

G. MOETE M&E Framework:

The educational advisors confirmed that the MOETE did not prepare a monitoring and evaluation framework to measure the effectiveness of EDU 2.0 and build on the results to modify their next actions. However, the RDP project was aimed at documentation which could have been the starting point for this step. Creating a M&E framework with measurable KPIs is of prime importance to ensure the implementation of EDU 2.0 is going smoothly and achieving the planned milestones. In addition, it would support the MOETE's decisions when it comes to further actions and implementation of EDU 2.0 to higher grades which is done annually.

H. Government Expenditure on Education:

The Egyptian government's expenditure on education was supposed to be increased as mandated by the 2014 constitution to 4% of GDP. However, the World Bank reports showed that it has decreased over the years till it reached 2.5% of GDP. This critical observation raises the question of whether the political will is actually supporting the education component or whether there are other priorities. As a result, it should be noted that the Egyptian government should stick to its commitment to the education sector and increase its spending on education.

I. Teachers Income Diversification

One of the challenges facing EDU 2.0 was eradicating the private tutoring system teachers turned to raise their socioeconomic status. The MOETE should combat it by raising their salaries and diversifying their revenue. This could be reached by offering them incentives

based on their students' performance and academic levels and, launching student competitions with significant monetary incentives to motivate them, offering grants to schools in order to renovate schools and invest in their resources.

7.3. Proposed Topics for Future Research

- Teachers' digital competencies were not examined during this study, and it is an important component that should be investigated in order to cope with EDU 2.0 reform.
- Further exploration of the teachers' PD should be done to identify the gaps alongside the gaps in curriculum and teachers' guides so that interventions can be tailored to fill those gaps.
- There were discrepancies identified between the teachers and the MOETE advisors concerning the importance of "Discover" curriculum and its purpose. Teachers stated that it was an enrichment curriculum, while CCIMD confirmed that it was extremely important for students before they reached grade 4. Besides, the long curriculum was one of the teachers' complaints, while CCIMD has already worked on it, and the curriculum was modified to be more suitable to the timelines. Those two areas should be explored further to identify the gaps thoroughly.
- Parents' guides should be explored because it was mentioned by one of the educational advisors, but their influence was not explored further.
- The study was performed through interviews with a small number of parents and teachers; extending it to examine how other teachers and parents perceived the reform while comparing public and private schools would be insightful.

- A comparative study between Sohag and urban areas would demonstrate the influence of EDU 2.0 on poor and high socioeconomic areas. It would also show whether the MOETE used different approaches when applying EDU 2.0 in urban versus rural areas.
- More interviews could be done with the current MOETE government officials in Sohag to explore how the policies were cascaded down inside Sohag's different areas from MOETE's perspective.
- Students' perspectives were not explored in this study; their viewpoints would be valuable on whether EDU 2.0 was effective. It would reveal whether students were satisfied with the change and the new pedagogies.
- Measuring the change in teachers' performance by closely monitoring it inside their classrooms would be a great indicator of the quality of the professional development programs offered to teachers.
- Students' academic performance would be an important measure to explore in order to assess the effectiveness of EDU 2.0. A measure of the change in their 21st-century skills targeted by EDU 2.0 would show us whether the transformative curriculum and the revolutionary pedagogies were working properly. This factor might entail new dimensions of EDU 2.0 in Sohag that this study could not reveal.
- An investigation should be performed into the root causes of parents transferring their children to the Azhari system and its underlying factors. Moreover, the possible outcomes of such disruptive decisions should be studied alongside the concerning probability of increased student drop-out rates in Sohag.

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Appendix

IRB Approval

THE AMERICAN UNIVERSITY IN CAIRO
INSTITUTIONAL REVIEW BOARD

Case# 2022-2023-06

To: Norhan Zahran
Laila Elbaradei
Menna Youssef

From: **Heba Kotb Chair of the IRB**
Date 20th September 2022

Re: IRB approval

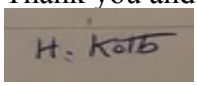
This is to inform you that I reviewed your revised research proposal entitled

"A review of Egypt's EDU 2.0 implications on teachers' ICT competencies: Sohag case study"

It required consultation with the IRB under the "expedited" category. As you are aware, there were minor revisions to the original proposal, but your new version addresses these concerns successfully.Your proposal used appropriate procedures to minimize risks to human subjects and that adequate provision was made for confidentiality and data anonymity of participants in any published record. I believe you will also make adequate provision for obtaining informed consent of the participants.
This approval letter was issued under the assumption that you have not started data collection for your research project. Any data collected before receiving this letter could not be used since this is a violation of the IRB policy.

Please note that IRB approval does not automatically ensure approval by CAPMAS, an Egyptian government agency responsible for approving some types of off-campus research. CAPMAS issues are handled at AUC by the office of the University Counsellor. The IRB is not in a position to offer any opinion on CAPMAS issues, and takes no responsibility for obtaining CAPMAS approval.
This approval is valid for only one year. In case you have not finished data collection within a year, you need to apply for an extension.

Thank you and good luck.



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