Knowledge E
enriching | engaging | empowering

Check for updates

Review Article

Inclusive Education for Exceptional Children in Egypt and the US: Reforming Egyptian Inclusive Education System in Post-pandemic World

الدمج الشامل للأطفال من ذوي القدرات الخاصة في مصر والولايات المتحدة الأمريكية: إصلاح منظومة الدمج الشامل المصرية في عالم ما بعد الجائحة

Noha Abbas

International and Comparative Education, Faculty of Education, Ain Shams University, Cairo, Egypt

ORCID
Noha Abbas: https://orcid.org/0000-0002-5204-8538

Corresponding Author: Noha Abbas; email: nohaabbass@yahoo.com

Abstract

Inclusive education means that exceptional children (EC) can fully participate in the learning process alongside their typically developing peers, supported by reasonable accommodations and teaching strategies that are tailored to meet their individual needs. The main goal of inclusion policies for EC is to provide high-quality education for all without discrimination and to ensure the implementation of equal opportunity principles. The primary purpose of this study is to explore the reality of inclusive education systems in Egypt and the United States (US) and to develop a better understanding of similarities and differences and thus identify the lessons learned. The study applied a comparative analysis method. Research findings revealed that the progress towards inclusion practices in Egyptian inclusive public schools is minimal and hindered by many challenges. Among them are lacking financial resources and a shortage of qualified teachers trained to differentiate curricula for EC. Based on the research findings, the study concludes with recommendations to improve the Egyptian inclusive education for EC.

الملخص

يقصد بالدمج الشامل المشاركة التامة للأطفال من ذوي القدرات الخاصة (EC) في العملية التعليمية جنباً إلى جنب مع أقرانهم الذين يتطورون بشكل اعتيادي، مع دعمهم بالموائمات المنهجية التيسيرية، وبإستراتيجيات التدريس الملائمة لتلبية احتياجاتهم الفردية. وتهدف سياسات الدمج الشامل للأطفال من ذوي القدرات الخاصة بشكل أساسي إلى توفير تعليم عالي الجودة للجميع دون تمييز، مع ضمان تطبيق مبدأ تكافؤ الفرص. إن الغرض الرئيسي لهذه الدراسة هو الكشف عن واقع منظومتي الدمج الشامل في كل من مصر والولايات المتحدة الأمريكية وتطوير فهم أفضل لأوجه التشابه والاختلاف بينهما وبالتالي تحديد الدروس المستفادة. ولقد طُبقت منهجية التحليل المقارن. وكشفت نتائج الدراسة عن أن التقدم نحو ممارسات الدمج الشامل في مدارس الدمج الشامل العامة المصرية تقدماً ضئيلاً ويعيقه العديد من التحديات. والتي من بينها نقص الموارد المالية وقلة عدد المعلمين الأكفاء المدربين على استراتيجيات التدريس المتمايز للأطفال من ذوي القدرات الخاصة. واستناداً إلى نتائج الدراسة التي تم التوصل إليها، تُختتم الدراسة بتوصيات لتطوير منظومة الدمج الشامل للأطفال المصرية من ذوي القدرات الخاصة.

🔓 OPEN ACCESS

1. Introduction

The philosophy of inclusive education is based on the principle of Zero-Reject, that everyone, regardless of circumstance, has a right to education. In this context, inclusive education can be defined as an education that promotes mutual respect and builds educational environments in which the approach to learning, the institutional culture, and the curriculum reflect the value of diversity (UNESCO, 2020). The United States (US) is considered among the first generation of developed countries that adopted one track approach for inclusion (OCED, 2020), where typically developing children, as well as exceptional children (EC), are served in inclusive public schools that respond to a wide range of learning needs. In Egypt, shifting to a twin-track approach for inclusion has been recently adopted in educational settings since the proclamation of Law No.10/2018 on the rights of Persons with Disabilities (PwDs). This research study questions the extent to which Egypt can benefit from the US experience in promoting a successful inclusive education model. To answer this question, the researcher first describes the features of inclusive education in Egypt and US, as well as explores the two countries' political, socio-economic and cultural contexts. This is followed by a review of research studies and official reports on inclusive education to establish the theoretical framework of this paper. Then, a comparative interpretive analysis is conducted to explore the similarities and differences between the inclusive education systems in Egypt and the US Finally, the study highlights the lessons learned from the two countries' journeys toward inclusion of EC in mainstream education and concludes with recommendations to contribute to reforming policies and practices of Egyptian inclusive education in post-pandemic world.

1.1. Statement of the problem

Despite the apparent progress toward achieving the goals of inclusion in Egypt, there are a significant number of Egyptian EC (with disabilities, difficulties, or disadvantaged) who are still excluded from the inclusive public schools and do not receive any type

of education; their increasing number exceeds two million (MOE, 2014). Moreover, EC who are included in public schools based on their official inclusion statements issued according to the Ministerial Decree No.252/2017 are partially included. This means that they are only included on paper, and they do not regularly attend school daily unless during examination periods.

1.2. Inclusive education in Egypt

In the following section, the characterization of Egyptian inclusive education reflects the relationships among the Egyptian political, socio-economic, and cultural contexts.

1.2.1. Political, socio-economic, and cultural contexts

Following the "Education for All" global movement, the UNICEF community school initiative in Upper Egypt launched in 1992 as a social movement with the overarching objective of provision of quality education for all, including disadvantaged, disabled, and at risk children, especially girls, that were hard to reach, whether it was because they were underprivileged, illiterate, or living in physically remote areas (Zaalouk, 2005). The major shift to adopting a rights-based inclusive education approach in Egypt started after the 2011 revolution. Under President El-Sisi's rule, there has been an increased awareness about the inclusion of people with disabilities and EC in society as a direct application of Article 81 of the Egyptian Constitution 2014. Unfortunately, the government's efforts to implement inclusive policies and practices in education, health, and employment do not show significant success, because Egypt's population is growing at an explosive rate. In addition, the Egyptian government embarked on an ambitious economic reform plan after the 2014/2015 fiscal year, but the Covid-19 pandemic contributed to the current Egyptian economy's sluggish growth and the slowing down of economic activity (Stanicek, 2021).

1.2.2. Elements of the Egyptian inclusive education

The Egyptian inclusive education system consists of five main elements which will be described in the following paragraphs.

Legislations and Laws. Article 81 of the Egyptian Constitution 2014 ensured that the "State shall guarantee the health, economic, social, cultural, sporting, and educational rights of persons with disabilities." (Egyptian SIS website, 2022). Consequently, the Ministry of Education (MOE) issued Ministerial Decree No. 252/2017, and the Egyptian

Parliament proclaimed Law No. 10/2018 on the rights of PwDs. They both ensure equal educational opportunities for all children, including EC, by implementing the twin-track inclusion policy. Correspondingly, all public and community schools become inclusive schools for EC with intellectual and physical disabilities and learning difficulties (MOE, 2017). At the same time, separate special schools are kept for children with severe and multiple disabilities. Moreover, Article 11 of Law No. 10 prohibits educational institutions from rejecting children's applications based on disability (Egyptian Parliament, 2018a).

Administration and Financing. The Egyptian inclusive education system has been affiliated to centralized administration, and the central government (represented by MOE) plays the overall roles of operation, planning, budgeting, financing, resource allocation, regulation, evaluation, and service delivery (MOE, 2014).The highly centralized administration of the Egyptian educational system has extensively led to challenges that affected the system's efficiency in achieving its main goals.In addition, government spending on education has declined continuously from 2004 to 2017; the percentage of the government's budget allocated for pre-university education decreased from 11.9% to 7.4% (CAPMAS, 2017). Moreover, the MOE does not have a determined funding model to address the individual educational needs of EC in inclusive public schools.

Schooling Models. They include formal inclusive public schools and non-formal community schools.

Inclusive Public Schools. Formal schools accept EC from age six to nine, except those with multiple disabilities, as they have segregated classes in special schools. Unfortunately, those inclusive public schools do not have interdisciplinary teams to prepare individual educational plans (IEPs) for EC with required accommodations and modifications. Moreover, they suffer from poor quality of education due to the high capacity of classrooms (Handicap International, 2016), which negatively affects the implementation of inclusionary practices in these schools.

Community Schools. They are currently provided to the largest possible number of disadvantaged children and those deprived of education in Upper Egypt governorates. In fact, 100,000 disadvantaged children were fully included in community schools until 2005 (Zaalouk, 2013). The number of community schools which are established by Non Governmental Organizations (NGOs) and supervised by MOE reached 4942 in 2021 (MOE, 2021a). Unfortunately, the lack of training of facilitators has led to the deterioration of the quality of education offered, and most children show low literacy levels (Hussein, 2019).

Curriculum and Assessment. As part of the Education 2.0 reform process for building new Egyptian curricula based on critical thinking, problem solving,and

the use of technology, MOE has developed new curriculum frameworks for mentally challenged children based on Education 2.0 guidelines (MOE, 2021b). Three references guide educational practitioners in developing and adapting paper-based, digital learning tools and inclusive teaching methods to various types of mentally and physically challenged EC (MOE, 2021b). These resources will be pivotal references for education staff working in Egypt's inclusive and special education schools. According to Article 36 of Executive Regulations of Law No.10, accommodations for assessments include extended time, font enlargement, reader for questions, writer for answers, omission of specific questions, Braille-based examination, computer-based examination, and sign-language translator.

Teacher Preparation. The initial teacher education (ITE) programs for general education teachers in the faculties of education in Egypt do not include courses related to inclusive education for EC (NAQAAE, 2013).On the other hand, special education ITE programs in the same faculties include courses pertaining to types of disabilities, their characteristics, and how to teach unique functional curricula in special education schools for children with intellectual, visual, and hearing disabilities (NAQAAE, 2013).Thus, there is a complete separation between the two tracks of regular and special education in initial teacher programs, which does not qualify teachers to teach in inclusive settings after graduation.

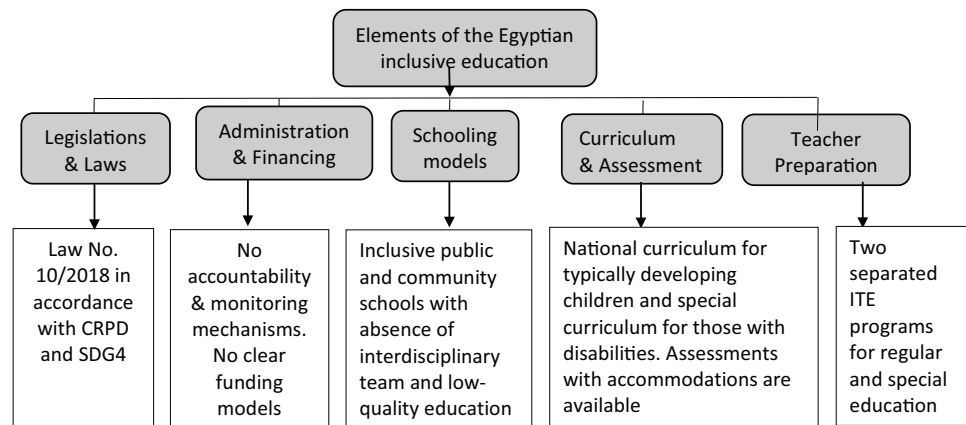### 1.2.3. Challenges of the Egyptian inclusive education

In fact, the targeted goal of the Egyptian twin-track approach for inclusive education has not been practically achieved because special schools could only accommodate a 0.2% of Egyptian EC (MOE, 2021a),which is far below the standard international capacity according to the natural proportion principle of 3% of total student population in the country (Salend, 2016). Additionally, those special schools are not truly acting as resource centers and do not have any types of partnerships with inclusive public schools.

To make matters worse, teachers and administrative staff in inclusive public schools lack the skills to apply differentiated instruction and research-based teaching methods in inclusive educational settings. At least 30% of in-service teachers are not pedagogically trained and thus are generally unqualified to teach effectively in inclusive schools (UNESCO, 2019). In addition, teachers in most inclusive public schools show negative attitudes toward the inclusion idea due to the absence of financial motivation, as MOE failed to apply the incentives decision (25% of basic salary as an incentive reward

for each teacher teaching in the inclusive classroom) (Article 12, Law No.252,2017). Elements of Egyptian inclusive education can be summarized as in Figure 1.

Figure 1

Elements of the Egyptian inclusive education.

	Elements of the Egyptian inclusive education			
Legislations & Laws	Administration & Financing	Schooling models	Curriculum & Assessment	Teacher Preparation
Law No. 10/2018 in accordance with CRPD and SDG4	No accountability & monitoring mechanisms. No clear funding models	Inclusive public and community schools with absence of interdisciplinary team and low-quality education	National curriculum for typically developing children and special curriculum for those with disabilities. Assessments with accommodations are available	Two separated ITE programs for regular and special education

1.3. Inclusive education in the US

In the following section, the characterization of the US inclusive education reflects the relationships among the US political, socio-economic, and cultural contexts.

1.3.1. Political, socio-economic, and cultural contexts

During the US civil rights movement of 1960, as Americans attempted to deal with issues of inequality and racial discrimination, the parents of EC also pushed for equal rights. As a result, legislation was enacted which helped EC in getting their educational rights. The late 1980s witnessed the evolution of the full inclusion movement that enhanced the cooperation between the general and special educators to assess the educational needs of children with disabilities and develop effective educational strategies for meeting those needs in the least restrictive environments (LRI) (Will, 1986).

1.3.2. Elements of the US inclusive education

The US inclusive education system consists of five main elements which will be described in the following paragraphs.

Legislations and Laws. The "Equal Protection Clause" of the 14th Amendment to the US Constitution has been the foundation for judicial rulings against discriminatory laws

affecting racial minorities, PwDs, and EC. In addition, the Individuals with Disabilities Education Act (IDEA, 1990) ensured a free appropriate public education in light of zero reject philosophy, LRE consistent with the child's educational needs, IEP, and assessment before placement in LRE. The IDEA (1997) Amendments added an individual transition plan for EC of 14–18 years added to student IEP; this plan allows for a coordinated set of activities and interagency linkages designed to promote the student's movement to post-school functions such as vocational training.

In 2001, the US Congress reauthorized the No Child Left Behind Act (NCLB, 2001), which reflects President Bush's commitment to a standard-based educational reform movement and accountability, that all students including EC with IEPs, are expected to demonstrate proficiency in mathematics, sciences, and reading. In 2015, the Every Student Succeeds Act (ESSA, 2015) was signed by President Obama; the ESSA advances equity by upholding critical protections for the US disadvantaged and high-need students and requires that all children, including EC, to be taught to high academic standards that will prepare them to succeed in college and careers.

Administration and Funding. The US has long traditions of highly decentralized inclusive educational policies. According to NCLB Act, the states hold accountable for aggregating data on student outcomes. To avoid sanctions, schools in each state must show that students in various subgroups are making adequate yearly progress toward mastering content standards, with the Federal Department of Education carrying out annual ratings of states' performances of their special education programs (Mitchell, 2015).

On the other hand, federal funds are made available to contribute to the costs of educating students with IEPs. On average, states provide about 45% and local districts about 46% of the support for special education programs, with 9% provided through federal IDEA funding (Mitchell, 2015). Across all 50 states, there are different funding models according to which states allocate special education funding to districts.

Schooling Models. They include fully serviced formal and non-formal models, as described in the following paragraphs.

Full Services Inclusive Public Schools. In the US, full services inclusive public schools, the EC, including children with multiple disabilities, spend most of school day in general education classrooms. In addition, general and special education teachers, and paraprofessionals are responsible for educating all children.They are all accountable for ensuring that typically developing children and EC receive a high-quality education that enables them to attain proficiency related to challenging state-standards(Mcleskey et al.,2014). Teachers and interdisciplinary teams

provide differentiated instruction to the whole and small groups through cooperative teaching and provide accommodations and modifications as needed.

Among the alternative, non-traditional pedagogical approaches to education applied in the US public schools are STEAM (Science, Technology, Engineering, Arts, and Mathematics) and Montessori approaches. STEAM in the US is an approach to teaching in which students demonstrate critical thinking and creative problem-solving. It uses arts integration as an instructional approach for experiential and inquiry-based learning to help all students to engage in the creative process and improve their academic achievement in all subject areas (Henriksen, 2017). On the other hand, public Montessori schools provide a differentiated approach to learning and remove financial barriers, enabling families to focus on learning (AMS,2022).

21st Century Community Learning Centers. These non-formal community centers provide academic enrichment opportunities during non-school hours for typically developing children and EC, particularly those who attend high-poverty and low-performing schools. The academic programs in these community centers help all students meet state content standards in core academic subjects through an array of enrichment activities that complement their regular academic programs, such as reading and math (OESE,2021).They offer children's families literacy and other educational services (OESE,2021).

Curriculum and Assessment. The NCLB Act specified that all students, including those with significant cognitive disabilities, must have the opportunity to participate and progress in the general curriculum. As stated in amended IDEA 2004, section 300.320, "IEPs must incorporate a statement of measurable annual goals designed to meet the child's needs that result from the child's disability, to enable the child to be involved and make progress in the general education curriculum." In addition, IDEA (2004) supports the use of technology and the incorporation of universal design of learning (UDL) principles in the development of educational standards, assessments, curricula, and differentiated instructional methods to support the education of EC. The ESSA (2015) emphasizes the use of research/evidence-based strategies, and interventions that demonstrates a statistically significant effect on improving student academic outcomes.In addition, the NCLB Act required the provision of alternate assessments for EC who could not participate in state or district assessments with or without accommodations.Districts can measure up to 3% of their students using alternate assessments. The use of alternate assessments is a decision by a student's IEP team.

Teacher Preparation. In 2001, the President's Commission on Excellence in Special Education recommended that pre-service and professional development training must

ensure that instruction in pedagogy which is research-based and linked directly to student learning and achievement. (US Department of Education, 2001).

Today, around 700 universities in the US offer research-based ITE programs to prepare pre-service teachers to become inclusive and special education teachers. Most states require special education teachers to complete a bachelor's degree program, although some will require a master's degree for special education licensure. Other states apply the collaborative model; they require licensure in general education first, then additional coursework in special education (Mitchell, 2015). Some states require a specialized categorical license (EC License) to teach EC with particular disabilities (Mitchell, 2015). Elements of the US inclusive education can be summarized as in Figure 2.

Figure 2

Elements of the US inclusive education.
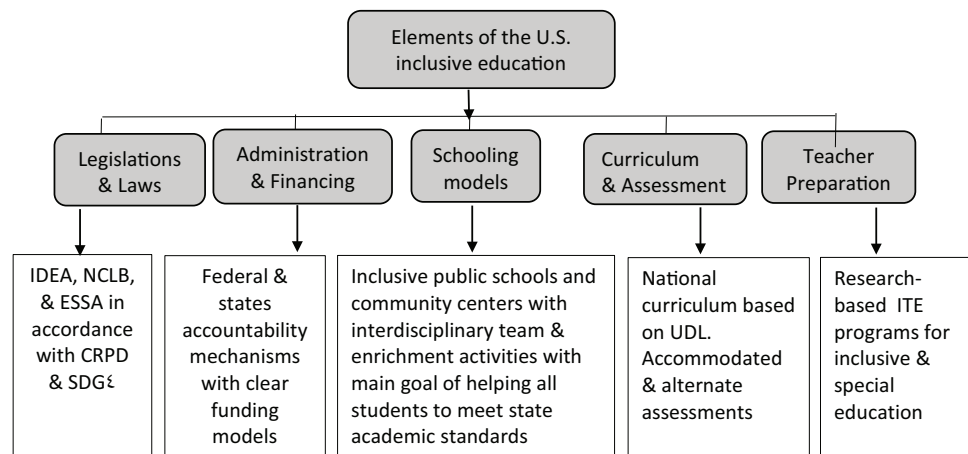
1.4. Theoretical framework

1.4.1. Inclusive education: Origins and principles

In the late 1990s, inclusive education for students with special educational needs (SEN) gained broader international consensus. In 1994, 92 countries signed the Salamanca Statement and Framework for Action on SEN. The document set the principle of inclusive education and recognized the need to work toward schools for all, which celebrate differences and respond to individual needs (UNESCO, 1994). Among the principles of inclusive education are changing the system to fit the student's needs and acknowl-edging all differences according to age, gender, ethnicity, language, health, economic status, religion, and disability (UNICEF, 2014). Therefore, the EC term is recently used

instead of SEN, as the term EC encompasses not only children with disabilities but also all children who may be disadvantaged.

1.4.2. Inclusive education tracks

Indeed, countries adapt different placement tracks to promote inclusive education based on available resources. Such as the one-track inclusive model, where countries include almost all children within inclusive education and place fewer than 1% of country students in segregated special settings. This involves reducing special schools' provision and developing inclusive schools that respond to a wide range of learning needs (UN, 2015). In addition, the twin-track model is based on the premise of developing inclusive public schooling while keeping some separate specialized provisions for specific types of impairments until total provisions to support whole-school inclusive policies in inclusive public schools can be provided (UN, 2015), the role of special schools here is to act as resource centers for supporting inclusive education in public schooling (UNICEF, 2014).

1.4.3. Elements of inclusive education

Legislations and Universal Conventions. The two important conventions which support the implementation of inclusive education for EC are the UN Convention on the Rights of the Child (CRC) 1989 and the UN Convention on the Rights of Persons with Disabilities (CRPD) 2007. Reasonably, Article 23 of the UN CRC (UN,1989) ensures that disabled child has the right to adequate access to quality education, training, healthcare, and rehabilitation services. In addition, Article 24 of the UN CRPD ensures inclusive education for EC and lifelong learning with no exclusion from compulsory education with reasonable accommodations and effective individualized support measures (UN,2007).

Administration and Financing. Countries apply different administration arrangements that significantly impact the effectiveness of the inclusive education system. Such as the application of more or less centralized and decentralized regulation frameworks and the application of accountability mechanisms. Overall, federal states often have decentralized inclusive education systems with state-level legislation, while non-federal countries tend to have a national centralized regulation framework (Mitchell,2015). In addition, accountability mechanisms are usually focused on outcomes of IEPs, the level of schooling achieved, additional support, and graduation rates (Shaddock et al., 2009).

However, the allocation of financing resources to support EC impacts the delivery of inclusive education services. Funding mechanisms to address EC include, but are not

limited to, an input model that emphasizes the census of the total student population per municipality, a resource-based model that emphasizes specific services provided instead of needs to be covered, and an output model that focuses on the student's results achieved (OCED, 2020).

Schooling Models. Diverse, inclusive schooling models depend mainly on the country's political, and socio-economic contexts. They include formal and non-formal models.

Formal Inclusive Schooling Models. Such as inclusive public schools which celebrate the value of all children by educating them together in high-quality, age-appropriate general classrooms with full access to a multilevel, universally designed curriculum and full participation in social activities. The inclusionary practices in these schools depend on full access for all diverse learners, individual strengths and challenges, and reflective general and special educators who collaborate to differentiate their teaching and assessment (Salend, 2016).

The interdisciplinary team in those schools includes professionals from other disciplines rather than education, such as psychology, speech and language, and physical and occupational therapy. The team is responsible for EC's assessment process. Suppose the assessment process determined that EC require special education services. In that case, the team develops IEPs with measurable annual goals, special education services, accommodations, and modifications needed for participation in the assessments (Gargiulo, 2015).

Non-formal Inclusive Schooling Models. Such as community schools and centers that are strategies for organizing the community's resources around student success. So, through extended hours, services, powerful teaching and relationships, and community schools support, children master 21st century skills. Their foundations include a robust instructional program, expanded learning opportunities, and a full range of health and social services designed to promote children's well-being and to remove barriers to learning (NCCS,2011).

Among the pedagogical approaches that promote inclusive learning practices in formal and non-formal inclusive schooling models are STEAM and Montessori approaches.The STEAM approach is designed to enable all students to acquire knowledge holistically and develop 21st century metacognitive skills (Anwari et al., 2015). With such critical thinking, creativity, collaboration, and problem-solving, STEAM students gain a competitive advantage and more job opportunities. On the other hand, the Montessori method was specifically designed by Dr. Maria Montessori in 1906 to address the needs of EC. It promotes an interactive learning environment, encourages practical work with manipulative scientifically designed materials, and accommodates

socio-emotional disorders by allowing students to draft most of their curriculum at their own learning pace (Dattke, 2014).

Curriculum & Assessment. Once inclusion policies and practices were implemented, many countries addressed the need for EC to access the regular curriculum based upon differentiated instruction. The advent of the standard-based reform movement enhanced this accessibility to the regular curriculum. It served as a vehicle for improving EC's academic and vocational opportunities through its components of content standards, achievement standards, instruction, assessment, and accountability (Martha &Rachel,2017). So, a standard-based curriculum will provide the EC with the tools and skills necessary to transition effectively to the next stage of life, whether going to college or entering the work force. On the other hand, applying UDL principles allows all children cognitive and physical access to the curriculum. UDL involves planning and delivering programs with the needs of all children in mind from the outset (Villa et al., 2005). It applies to all facets of education: curriculum, assessment, pedagogy and school design.

According to the standards-based reform movement, most EC can participate in national country assessments and district and school assessments with or without accommodations. Assessments with accommodations involve making changes to the assessment process, but not the essential content. Accommodations include alterations to setting, timing, administration, and types of responses in assessments (Mitchell,2015). However, for certain cases of EC, alternate assessments are needed as they cannot participate in the national assessments even with accommodation; the main types of alternate assessments comprise portfolios, IEP-linked bodies of evidence, performance assessments, and checklists.

Teacher Education. Many countries are adapting different ITE programs to prepare pre-service teachers for inclusive education. Stayton and McCollun (2002) explained three general models for ITE programs that train for inclusion; the infusion model, collaborative training model, and unification model. In the infusion model, initial teachers take one or two inclusive education courses. In the collaborative training model, there are many courses for initial teachers that deal with teaching in inclusive and special education classes to do all or part of their practical experiences together. Finally, in the unification model, all initial teachers study the same curriculum that trains them to teach mainstream education with a focus on EC.

1.5. Study methodology

This study employs a comparative analysis method in examining the reality of inclusive education systems in Egypt and the US. According to Brays and Thomas (1995), comparative analysis method enables researchers to understand variations and identify patterns in the ways in which educational systems around the globe are shaped by societal, political, economic, and cultural forces. The study depends on reviewing and comparing related scholarly literature and official reports undertaken on inclusive education systems in Egypt and the US to identify the similarities and differences between the two systems. Then a comparative interpretive analysis is conducted to better understand the inclusive education movements in both countries and how the challenges could be overcome. Thus, lessons learned and new emerging trends in the implementation of inclusive education policies and practices could be identified. The study concludes with recommendations in the hope of answering the main question of "How can Egypt benefit from the US experience in the implementation of a successful inclusive education model?"

Among the themes that are derived from the comparative analysis are the necessity of applying strong accountability system and explicit funding model to maintain the inclusionary practices inside inclusive schooling models. In addition, the necessity of the presence of interdisciplinary team of regular and special educators who practice differentiated instruction and apply research-based teaching strategies in inclusive learning settings.

1.5.1. Inclusive education in Egypt and the US: A comparative analysis

Using data from the comparative analysis, this section compares inclusive education systems in Egypt and the US to assess the findings isolated from comparative analysis in light of their similarities and differences to extrapolate lessons learned.

1.6. Legislations and Laws

The origin of inclusive education initiatives in Egypt and the US is based on great social movements in the two countries. The reformative civil rights movement in the US helped EC to get their fundamental educational rights in the early 1970s through judicial actions and legislative enactments. The IDEA 1975 and its 90 and 97 Amendments ensured free public education and special education services for EC especially those with disabilities. In Egypt, a revolutionary social movement that started in 2010 led to the 2011 revolution.

The January 25th uprising raised the aspirations of millions of PwDs and parents of EC; as a result, Ministerial Decree No.252/2017 and Law No.10 on the rights for PwDs were enacted. Accordingly, all Egyptian public, private, and community schools were transformed into inclusive schools for EC. Quality inclusive education for EC became a significant focus of the two countries attention. The two political systems: the Egyptian republicanism system and the US federation system, are supporting the EC through their constitutions.

Although, the Egyptian Parliament and the US congress were able to enact revolutionary laws to implement inclusive education policies and practices, commitment toward laws enforcement differs in the two countries. In the US, data collection activities to monitor compliance with IDEA point out that from the school year 2010 through 2020, the number of students aged three to 21 who received special education services under IDEA increased from 6.5 million (13% of total public school enrollment) to 7.3 million (14% of total public school enrollment) (NCES, 2021). Conversely, in Egypt and since the issuance of Ministerial Decree No. 252/2017 and proclamation of Law No. 10/2018, only 151,943 EC are included in inclusive public schools and special schools out of 2,725,985 EC (who are ages five to 18 and are not yet enrolled either in inclusive public schools or special schools and who represent 11.56% of total public school enrollment in 2020) (Auther,2020).

Despite the promulgating detailed, strict executive regulations of Law No.10/ 2018 to effectuate its provisions (Egyptian Parliament, 2018b), the Egyptian EC remain excluded from the mainstream education, and the current educational policy still does not support their inclusion (Hassanein, 2021). Public and private schools refuse to accept them due to a lack of awareness concerning the law. In addition, the admission conditions for EC are based on the culture of each school, and some principals do not accept the idea of inclusion of EC in their schools (Handicap International, 2016). This forced their upset parents to submit petitions to the Egyptian Parliament in which they rejected the negative and abusive attitude of teachers and school principals toward their EC (Egyptian Parliament, 2019). In fact, low enrollment of EC in inclusive public schools in Egypt can be attributed to the failed implementation of the ruling of law principle, which is successfully implemented in the US.

1.7. Administration and Funding

In the US, there is a long tradition of centrifugal shifting in educational administration (decentralized); this led to the creation of an inclusive education system in the US that is based on a rights-approach and seeks to raise levels of accountability. According

to NCLB, the school accountability mechanisms are built on performance assessment. The results of students' assessments, measurements against standards for determining school rankings, and judgment for specific consequences are applied to schools and teachers. The consequences vary from support, reward, penalties, or sanctions according to the results.

Conversely, in Egypt, the shift is always centripetal (centralized); the highly centralized Egyptian inclusive education system led to a top–down policy approach that limits the involvement of districts and schools and fails to apply accountability mechanisms. Issues stemming from ineffective accountability and monitoring mechanisms in administrating the Egyptian inclusive education system are rising. This is why EC are currently facing a lot of problems in inclusive public schools, such as the shortage in the usage of resource rooms, the inappropriateness of examinations for EC due to lack of reasonable accommodations, the lack of legal companions during exams, the reluctance of teachers to include EC, high rates of teachers' absenteeism, and ineffective classroom instruction (World Bank, 2018). Ultimately, accountability in education is a system that allows the public to understand how well their schools are working and provides policymakers with the necessary changes to make schools more effective (CCSSO,2007). Consequently, there is an urgent need in Egypt to decentralize its inclusive education system and establish an accountability and monitoring mechanisms.

On the other hand, Part B of IDEA 97 provides federal funding to the US states for the education of EC, especially children with disabilities in public schools, and requires, as a condition for the receipt of such funds, the provision of a free appropriate public education to children with disabilities. School districts within participating states must identify, locate, and evaluate all children with disabilities to determine which children are eligible for special education and related services. Each child receiving services must have IEP created by an IEP team, delineating the specific special education and related services to be provided to meet his needs. Part B was funded at $12.8 billion in the fiscal year 2019, and in the 2017–2018 school year, 7 million children ages three through 21 received educational services under it (CRS, 2019). In addition, the US states have increased opportunities for STEAM schools through federal and state funding under ESSA; both Georgia and Ohio states offer STEAM school certification for all students (Dell'Erba, 2019). Furthermore, according to ESSA 2015, the 21st century community learning centers initiative is the only federal funding source dedicated to supporting local summer learning and afterschool programs. Each state receives funds based on its share of Title I funding for low-income students.

In Egypt, the government has made extensive efforts to improve the accessibility and quality of education by increasing the funding allocations for education. According to the UNICEF Egypt (2022), the allocation for pre-university education in 2021 was approximately EGP 256 billion, with more focus on technical education, training initiatives, increasing classroom numbers, and developing online education in light of the COVID-19 pandemic. Actually, the MOE does not allocate a special budget for the inclusion of EC and for building IEPs with the provision of services required. Moreover, it does not follow a specific funding model that relates the resources available to the number of included EC in inclusive public schools. On the other hand, the community schools are fully funded by NGOs.

1.8. Schooling Models

Similarly, Egypt and the US have adapted the inclusive education policies and practices in formal and non-formal educational settings. However, the US schooling models are fully serviced schools that facilitate the inclusion of all categories of EC due to the presence of all services needed by the EC and their families. Fully serviced schools are defined as one-stop institutions that integrates education, medical, and social services to meet the needs of children, youth, and their families on a school's campus (Dryfoos, 1998). Complimentary services include counseling, behavior sessions for children, after-school tutoring, enrichment activities, and medical and health services. In addition, the US schooling models have an interdisciplinary team that develops an individualized and comprehensive assessment package that evaluates broad developmental domains.

The STEAM school model is a national strategy implemented broadly with positive impacts for all US children and adolescents, including those with low-income, disabilities, under-represented minorities, and girls (The White House,2014). The multisensory nature of the STEAM approach, the hands-on activities, the experiential learning, the opportunities for exploration concerning different scientific subjects, and the use of tactile and manipulative tools in combination with creative art activities such as visual arts and music have multiple benefits for all children including EC (Gess, 2017). For teaching EC, STEAM teachers collaborate with special educators and interdisciplinary team members to individualize the STEAM curricular units for EC to help them work toward the IEPs goals (Waston Institute, 2021).In addition, Montessori public schools have the dual responsibility of adhering to state standards while maintaining the quality of Montessori education through mixed-age groups of students, accredited Montessori teachers by the Association Montessori Internationale (AMI), developmentally appropriate Montessori materials, and extended uninterrupted work cycle in the presence of multidisciplinary

team (AMS, 2022). Furthermore, according to the ESSA (2015), the US non-formal 21st century community learning centers provide services to children attending high-poverty and low-performing schools, such as academic enrichment activities to help students meet state standards.

In Egypt, MOE declared that there are 108,224 children with mild disabilities and learning difficulties enrolled in 19,005 Egyptian inclusive public schools (MOE, 2021b). However, 1116 special schools serve 43,719 children with severe and multiple disabilities (MOE, 2021a). In contrast to the US, all Egyptian schooling models lack the presence of an interdisciplinary team and lack the presence of special educator visitors from the nearest special school in the community (according to Ministerial Decree No. 252, Article 5). This does not qualify those Egyptian schooling models for successful implementation of twin-track policies and practices. Moreover, inclusionary techniques are not firmly applied inside inclusive public schools due to the absence of strict accountability and monitoring mechanisms and the shortage of MOE financial resources to facilitate the inclusion of EC in these schools (Handicap International, 2016).To make matters worse, Article 38 of the Executive Regulations of Law No.10 limits the position of the special educational needs coordinator (SENCO), who is responsible for building the IEPs and following-up on their implementation, to special schools only and does not enhance the creation of this position in the inclusive public schools as well. This prohibits the EC in these schools from opportunities of building tailored IEPs according to their abilities and capabilities and intensify their exclusion.

Needless to say, teaching methods used to teach the Egyptian EC are the same traditional methods without creative teaching aids. There is a paucity of implementation of creative, inclusive pedagogical approaches which promote active participation of all children, such as STEAM and Montessori approaches, which are progressively applied in the US. Practically speaking, the STEM approach is used in Egypt for gifted and talented students only. However, it is applied in other countries with all students, including those with disabilities (Ghanem, 2019). On the other hand, Montessori activities are not applied in inclusive public schools. However, MOE technical inclusion guidance bulletin explains in detail these activities to be applied by teachers in inclusive educational settings with EC (MOE, 2019).

Additionally, the quality of education offered to EC in Upper Egypt remain an issue. In a study conducted by Langsten (2014), it was found that only one-third of the sample of girls interviewed from three villages in Upper Egypt in 2012 knew the name of the Governorate and the district they lived in. The community schools UNICEF model introduced in the early 1990s was up-and-coming, but a significant reform seemed necessary for the current model.

1.9. Curriculum and Assessment

In fact, the US has one national, universally designed curriculum that all learners, including EC should access, according to IDEA (2004). In addition, the measurable annual goals stated in the students' IEPs allow them to access the national curriculum and progress significantly in its subjects. Conversely, Egypt has a newly developed national curriculum and is still developing alternative special curricula and guidelines for EC with disabilities.

The US was able to ensure access of EC to the general curriculum via applying the UDL principles during the curriculum design process, which allowed the learning outcomes to be achievable by children of wide differences in their abilities. In addition, UDL is implemented with STEAM instructional units to help the retention and persistence of students with disabilities (Schreffle, 2019). Actually, UDL provides equal access to learning, not equal access to information (Gargiulo,2015); Egypt should ensure accessibility of all learners, including EC to Education 0.2 newly structured curricula through the application of UDL.

In addition, IDEA supports the use of technology and the application of differentiated instructional methods. Differentiated instruction in the US schooling models works as a vehicle to achieve academic and social inclusion. In contrast, placing Egyptian EC within regular classes without embodying changes in the content through differentiated teaching strategies does not constitute inclusion. Differentiated teaching occurs when the teacher plans a lesson that adjusts either the content being discussed, the process used to learn, or the product expected from students to ensure that learners at different starting points can receive the instruction they need to grow and succeed (Tomlinson, 2014).

According to IDEA (2004), the way in which EC are assessed can also be differentiated, and reasonable accommodations could be applied to the child assessments, so that any disability or learning difficulty the child might have can be overcome. Alternate assessments are also available in US schooling models for 3% of public school students. In Egypt, assessments with accommodations are available, but EC parents always complain that accommodations are not based on their children's needs and are not reasoned. Moreover, assessments are long and inappropriate for EC's academic levels (Handicap International, 2016), and there are no alternate assessments.

1.10. Teacher Preparation

In the US, special education ITE programs in universities vary between the infusion and collaborative models. In addition, during the general ITE program, trainee teachers usually have the option of undertaking specific optional courses relating to special education (Mitchell, 2015). Ultimately, there is a perfect alignment between ITE programs for special education teachers and general education teachers, ensuring that trainee teachers meet the requirements of state licensing regulations and can teach in inclusive settings. Moreover, according to NCLB, teachers in the US are required to use evidence-based teaching strategies, which may be defined as clearly specified teaching strategies that have been shown in controlled research to be effective in bringing about desired outcomes in a delineated population of learners (Mitchell, 2014).

In Egypt, the ITE programs for general education do not include any courses for inclusive education, and there is a complete separation between the ITE programs for special education teachers and general education teachers. This makes it impossible to apply successful inclusive education practices in inclusive public schools because regular and special education teachers were not trained at the university preparatory stage on collaborating effectively to accommodate the EC in inclusive learning environments. A reform of ITE programs for general and special education must be undertaken to the support inclusion of EC in Egypt.

A summary of similarities and differences between the Egyptian and the US inclusive education systems is presented in Table 1.

1.11. Lessons Learned and Recommendations

From the theoretical and comparative studies, it was learned that it is necessary to raise public awareness and create cultural and social contexts in which the rule of law is respected and promulgated. As a result, the government and private sector will be held accountable under the law. Practically speaking, legislations for PwDs and Ministerial Decrees for inclusion of the EC should be publicly disseminated. A strong accountability and monitoring system should be applied to ensure effective, controlled, and just implementation.

Another lesson to learn is that the quality education in inclusive schooling models could be maintained sustainable by the presence of an interdisciplinary team of regular and special educators and paraprofessionals who are sharing collaborative, differentiated teaching strategies and apply UDL principles on curricula, assessments, and

Table 1

Similarities and differencies between inclusive education in Egypt and the US.

Elements of inclusive education	Egypt	The US
Legislations & Laws	Enacted on rights-based approach, in line with CRPD standards. Not implemented efficiently. Weak public awareness.	Enacted on rights-based approach, in line with CRPD standards. Implemented firmly and efficiently. High public awareness.
Administration & Funding	Highly centralized administration with no accountability and monitoring systems. No explicit funding models.	Decentralized administration with precise accountability mechanisms based on performance assessment. Specific funding model for each state based on the number of EC with IEPs.
Schooling Models	Poorly serviced &resourced schooling models. Absence of an interdisciplinary team and no innovative, supportive pedagogies for inclusion.	Fully serviced schooling models. Presence of interdisciplinary team with research-based supportive pedagogical approaches for successful inclusion (e.g., STEAM & Montessori).
Curriculum and Assessment	National newly reformed curriculum based on Educ. 0.2 initiative. No differentiated instruction. Special curriculum and guidelines for children with disabilities. Assessments with accommodations are not based on children's needs. No alternate assessments.	National curriculum for each state based on UDL. Differentiated instruction. Reasoned accommodated and alternate assessments.
Teacher Preparation	Fully separated initial teacher education programs for regular and special education teachers which does not ensure teaching in inclusive settings after graduation. Teaching strategies are not linked to findings from evidence-based research.	Initial teacher education programs based on infusion and collaborative models. Research-based teaching strategies. Categorical EC license (optional)

pedagogies to ensure full access and participation for all children including EC who have disabilities, learning disabilities, or those who are disadvantaged.

In this section, the study provides its concluding recommendations for reforming the Egyptian inclusive education system for EC. One suggestion for effectuating provisions of law No.10/2018 on the rights of PwDs is to establish strict accountability and monitoring system on the directorate, district, and school levels. In addition, MOE is struggling to improve the quality of inclusive education in formal and non-formal schooling models. Hence, the study recommends that MOE creates the position of SENCO in the organizational structure of the inclusive public and community schools, which will be responsible for building the IEPs for EC. Moreover, a special education teacher from the nearest special school in the community could visit the inclusive public and community schools once per week to help teach children with disabilities and set reasonable accommodations and modifications that meet their needs.

Changing current special schools into resource and training centers that offer full services for the EC and their teachers in inclusive public schools is a pertinent step in assuring the quality of inclusive education in these schools. The resource and training centers could also offer regular professional development programs on differentiated instruction for in-service general education teachers, which help change their negative attitudes toward EC in their classrooms. Regarding the allocation of funding resources, the study suggests that funds for every district could be determined according to the number of EC with statements registered in that district's schools according to the input funding model. Significantly, ITE programs for regular and special teachers in the Egyptian university should be modernized according to the current evidence-based teaching strategies for EC in inclusive settings, focusing on Montessori and STEAM educational approaches.

Lastly, creating a new department for inclusive education in every faculty of education in Egyptian public universities will be essential in supporting the success of inclusion policies and practices. One main task for such a department is to align and perfectly relate ITE programs for regular and special education teachers so that a variety of programs that train for inclusion would be available in schools of education.

2. Conclusion

To sum up, Egypt has achieved a milestone in drafting and enacting legislations and laws pertaining to the inclusion of EC in mainstream education, which is in line with the international standards in CRPD. However, the current Egyptian context shows a gap between laws and practice. Egypt should learn from the US's remarkable experience in implementing effective accountability and monitoring system to carry out the laws related to the inclusion of EC. The main findings explored in this study reveal the urgent need to determine funding resources for EC with statements based on input funding model. In addition, for MOE to be able to meet the growing demand for diagnostic services for EC and the urgent need for quality inclusive teaching and learning in formal and non-formal schooling models, the current special schools should be transformed into full services resource centers that integrate educational, medical, and social services which are highly beneficial for meeting the needs of EC. The intensive training sessions and collaboration between regular teachers, special education teachers, and professionals in these centers will provide the prevention, intervention, and support services needed by EC. Moreover, ITE programs for regular and special education teachers need to be more firmly linked to evidence-based research findings that indicate effective and best practices in inclusive settings.

Acknowledgements

Funding Information

Competing Interests

None.

Author Biography

Noha Abbas Mohamed has Master's degree in Comparative and International Education from American University in Cairo (2014), an Association Montessori Internationale (AMI) Elementary Diploma from Maria Montessori Institute UK (2018), and Ph.D. in Comparative and International Education from Ain Shams University (2020).Her research interests include inclusive education, Montessori education, STEAM on Montessori education, quality assurance and accreditation.

References

[1] American Montessori Society (AMS). (2022). *Montessori Public Schools: AMS is dedicated to bring the Montessori Method to public schools nationwide.* https://amshq.org/Educators/Montessori-Schools/Montessori-Public-Schools

[2] Anwari, I., Yamada, S., Unno, M., Saito, T., Suwarna, I. R., Mutakinati, L., & Kumano, Y. (2015). Implementation of authentic learning and assessment through STEM education approach to improve students' metacognitive skills. *K-12- STEM Education*, *1*(3), 123–136.

[3] Author. (2020). *Development of inclusive education system for exceptional children at pre-university education in Egypt in light of the experiences of other foreign countries* [Doctoral dissertation]. Faculty of Education, Ain Shams University.

[4] Bray, M., & Thomas, R. M. (1995). Levels of comparison in educational studies: Different insights from different literatures and the value of multilevel analyses. *Harvard Education Review*, *65*(3), 472–490.

[5] CCSSO. (2007). *Key elements for educational accountability models* [A paper commissioned by the Council of Chief State School Officers Accountability Systems and Reporting State Collaborative]. Washington, DC: CCSSO.

[6] The Central Agency for Public Mobilization and Statistics (CAPMAS). (2017). *Egypt census 2017*. https://censusinfo.capmas.gov.eg/Metadata-en-v4.2/index.php/catalog/405

[7] Congressional Research Service (CRS). (2019). The Individuals with Disabilities Education Act (IDEA) Funding Report: A Primer. USA: Congressional Research Service.

[8] Dattke, J. (2014). A Montessori model for inclusion. *The NAMTA Journal*, *39*(3).

[9] Dell'Erba, M. (2019). *Policy considerations for STEAM education* [Policy brief]. USA: ARTS Education Partnership.

[10] Dryfoos, J. (1998). Full-service schools: A revolution in health and social services for children, youth and families. San Francisco: Jossey-Bass.

[11] Egyptian Parliament. (2019). *Demands to abolish educational inclusion expose the problems of students with disabilities, November 5th 2018*. http://www.parliament.gov.eg

[12] Egyptian Parliament. (2018a). Law No. 10 on Rights of Persons with Disabilities, issued on 2018, February 19th. Cairo: The Official Gazette, No. 7C, Articles 11 & 12.

[13] Egyptian Parliament. (2018b). The Executive Regulations of Law No. 10/2018 on the Rights of Persons with Disabilities, issued on 2018, December 23rd. Cairo: The Official Gazette, No. 51.

[14] Egyptian State Information Service (SIS) website. (2022). *Constitution of the Arab Republic of Egypt 2014, as amended to 2019*. https://constitutionnet.org/vl/item/egypt-constitution-2014

[15] Gargiulo, R. (2015). Special education in contemporary society: An introduction to exceptionality. USA, California: SAGE Publication.

[16] Gess, A. H. (2017). STEAM education: Separating fact from fiction. *Technology and Engineering Teacher*, *7*(3), 39–41.

[17] Ghanem, T. (2017). STEM Education and its application at the global and local levels. *Review of the National Center for Educational and Developmental Research*, in Arabic, 1–29

[18] Handicap International. (2016). Inclusion of students with disabilities in primary education in public schools: Assessment report, handicap international and IRCKHF. https://www.humanitarianresponse.info/en/operations/occupied-palestinian-territory/assessment/handicap-international-inclusion-students.

[19] Hassanein, E., Adawi, T. R., Johnson, E. (2021). Barriers to including children with disabilities in Egyptian schools. *Journal of International Special Needs Education*, *24*(1), 25–35

[20] Henriksen, D. (2017). Creating STEAM with design thinking: Beyond STEM and arts integration. *The STEAM Journal*, *3*(1), 11.

[21] Hussein, A. (2019). *Assessing community based education in Upper Egypt failure and success* [Master's thesis]. The American University in Cairo, AUC Knowledge Fountain. https://fount.aucegypt.edu/etds/285

[22] Langsten, R. (2014). The experience of CARE's multi-grade schools in three upper-Egyptian villages. In M. Fam & K. Kassab (Ed.), *A second chance: Community based education in Upper Egypt: Its prospects and challenges* (p. 59). Cairo: CARE Egypt.

[23] Martha, L., & Rachel, F. (2017). Standard-based reform and students with disabilities. In D. Hallahan & J. Kauffman (Eds), *Handbook of special education* (p. 134). London: Routledge, Taylor & Francis Group.

[24] McLeskey, J., Waldron, N. L., Spooner, F., Algozzine, B. (Eds). (2014). What are effective inclusive schools and why are they important? In *Handbook of effective inclusive schools: Research and practice* (p. 9). New York, USA: Routledge.

[25] Ministry of Education (MOE). (2021a). *Statistical annual book 2020-2021: Schools-classes-students* (p. 1). https://emis.gov.eg/annual_book.aspx?id=400.

[26] MOE. (2021b). *International day of people with special needs/Efforts of the MOE in the field of educational integration in Egyptian schools within the framework of the education system (2.0)*. https://moe.gov.eg/en/what-s-on/news/international-day-of-people-with-special-needs

[27] MOE. (2019). *Technical and Administrative Inclusion Guidance Bulletin, Central Administration for Special Education*. In Arabic. p. 1–37. https://moe.gov.eg

[28] MOE. (2017). Ministerial Decree No. 252 about the admission of students with mild disabilities in public schools, issued on 2017, August 5th. Cairo: MOE, Article 12.

[29] MOE. (2014). *The national strategic plan for pre-university education in Egypt (2014–2030): Egypt National Project*. https://planipolis.iiep.unesco.org/sites/default/files/ressources/egypt_strategic_plan_pre-university_education_2014-2030_eng_0.pdf

[30] Ministry of Finance. (2021). *Spotlight on children in the 2020/21 and 2021/22 budget* [Budget Transparency Brief No. 5]. https://www.unicef.org/egypt/media/7541/file/spotlight%20on%20children%20transparency%20brief%202021.pdf

[31] Mitchell, D. (2015). *Education that fits: Review of international trends in the education of students with special educational needs* (2nd ed.). New Zealand: University of Canterbury.

[32] Mitchell, D. (2014). What really works in special and inclusive education: Using evidence-based teaching strategies (2nd ed., p. 16). Abingdon, Oxon: Routledge.

[33] National Authority for Quality Assurance and Accreditation (NAQAAE). (2013). National academic reference standards for the faculties of education (1st ed., pp. 12–28). Cairo: NAQAAE.

[34] National Center for Community Schools (NCCS). (2011). *Building community schools: A guide for action* (p. 19). New York: The children's Aid Society.

[35] National Center for Education Statistics (NCES). (2021). *The condition of education at a glance: Children with disabilities* (p. 1). Washington DC, USA: NCES.

[36] Office of Elementary and Secondary Education (OESE). (2021). *21st century community learning centers.* https://oese.ed.gov/offices/office-of-formula-grants/school-support-and-accountability/21st-century-communitylearning-centers/

[37] Organization for Economic Co-operation and Development (OECD). (2020). *Mapping policy approaches and practices for the inclusion of students with special education needs* [OECD Education Working Paper No. 227]. https://www.oecd-ilibrary.org/education/mapping-policy-approaches-and-practices-for-the-inclusion-of-students-with-special-education-needs_600fbad5-en

[38] Salend, S. (2016). *Creating inclusive classrooms: Effective, differentiate and reflective practices*. USA: Pearson Education.

[39] Schreffler, J., Vasquez III, E., Chini, J., & James, W. (2019). Universal design for learning in postsecondary STEM education for students with disabilities: A systematic literature review. *International Journal of STEM Education*, *6*, 8.

[40] Shaddock, A., MacDonald, N., Hook, J. Giorcelli, L. & Arthur-Kelly, M. (2009). *Disability, diversity and tides that lift all boats: Review of special education in the ACT*. Chiswick, NSW: Services Initiatives.

[41] Stanicek, B. (2021). *Egypt's foreign policy within a challenging regional context* (pp. 1–8). European Parliamentary Research Service EPRS, European Union.

[42] Stayton, V. D., & McCollun, J. (2002). Unifying general and special education: What does the research tell us? *Teacher Education and Special Education*, *25*(3), 211–218.

[43] Tomlinson, C. A. (2014). *The differentiated classroom: Responding to the needs of all learners* (2nd ed.). Alexandria VA: ASCD.

[44] UNESCO. (2020). *Global Education Monitoring Report: Inclusion and education: All means all*. Paris: UNESCO. https://en.unesco.org/gem-report/report/2020/inclusion

[45] UNESCO. (2019). *Global Education Monitoring Report: Inclusion*. Egypt. https://en.unesco.org/gem-report/search/node?keys=Egypt

[46] UNESCO. (1994, June 7–10). *The Salamanca Statement and Framework for action on SEN, world conference on special needs education: Access and quality*. World Conference on Special Needs Education: Access and Quality, Salamanca, Spain. http://dx.doi.org/ED-94/WS/18

[47] UNICEF. (2014). *Conceptualizing inclusive education and contextualizing it within the UNICEF mission*. New York, USA: United Nations.

[48] United Nations (UN). (2015). Global status report on disability and development. New York: United Nations. https://www.un.org/disabilities/documents/desa/globalstatusreport2015prototype.docx

[49] United Nations. (2007). Convention on the Rights of Persons with Disabilities (CRPD), issued on 2006, December 13th. New York: United Nations, Article 24.

[50] United Nations. (1989). Convention on the Rights of the Child, issued on 1989, November 20th. New York: United Nations, Human Rights Office of High Commissioner, Article 23.

[51] The 101st United States Congress. (1990). Individuals with Disabilities Educational Act, Public Law 101–476, issued on 1990, October 31st. Washington DC: USA Congress, Sec. 4.

[52] The 105th United States Congress. (1997). Individuals with Disabilities Education Act Amendments, Public Law 105–117, issued on 1997, June 5th. Washington DC: USA Congress.

[53] The 107th United States Congress. (2001). No Child Left Behind Act, Public Law 107–110, issued on 2001, December 13th. Washington DC: USA Congress.

[54] The 108th United States Congress. (2004). Individuals with Disabilities Education Improvement Act, Public Law 108–446, issued on 2004, December 3rd. Washington DC: USA Congress, 614(d)(I)(A)(i)(II).

[55] The 114th United States Congress. (2015). Every Student Succeeds Act, Public Law 114–95, issued on 2015, December 10th. Washington DC: USA Congress, (21)A.

[56] US Department of Education. (2001). *President's Commission on Excellence in Special Education. A new era: Revitalizing special education for children and families* (p. 53). USA: Education Publications Center.

[57] Villa, R. A., Thousand, J. S., Nevin, A., & Liston, A. (2005). Successful inclusive practices in middle and secondary schools. *American Secondary Education*, *33*(3), 33–50.

[58] Waston Institute. (2021). *Incorporating STEAM learning into special education curriculum*. https://www.thewatsoninstitute.org/incorporating-steam-learning-into-special-education-curriculum/

[59] The White House. (2014). *Preparing a 21st Century Workforce-Science, Technology, Engineering, and Mathematics (STEM) education in the 2014 budget*. http://www.whitehouse.gov/ostp.

[60] World Bank. (2018). *Supporting Egypt education reform project, International Bank for reconstruction and development project appraisal document on a proposed loan* [Report No: PAD2644]. https://documents1.worldbank.org/curated/en/346091522415590465/pdf/PAD-03272018.pdf

[61] Will, M. (1986). Educating children with learning problems: A shared responsibility. *Exceptional Children*, *52*(4), 411–415.

[62] Zaalouk, M. (2013). Educators, professionalism and politics: Global transitions, national spaces and professional projects. In T. Seddon & J. Levin (Eds.), *World year book of education 2013* (p. 207). USA: Routledge Group.

[63] Zaalouk, M. (2005). *The pedagogy of empowerment: Community schools as a social movement in Egypt, Cairo* (pp. 32, 34). American University in Cairo Press.