

Al-Husseiny, Nader

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Using ICT in inclusive learning programs for Persons with Disabilities and its impact on their lives

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**Using ICT in inclusive learning programs for Persons
with Disabilities and its impact on their lives**

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Introduction:

Persons with disability:

With almost 12 million persons with disabilities (“PWDs”) in Egypt, the exclusion of this segment of the society does not support the social and economic development the country desires. Although Egypt ratified the Convention on the Rights of Persons with Disabilities (CRPD) in 2008, it did not put it into action until 2012, when the Ministry of Communications and Information Technology (MCIT) held its first conference on Information and Communications Technology for Persons with Disabilities (ICT4PWDs).

Assistive Technology:

Assistive technology devices are identified in the Individuals with Disabilities Education Act (IDEA) (IDEA, 2004) as:

Any item, piece of equipment or product system, whether acquired commercially off the shelf, modified, or customized, that is used to increase, maintain, or improve the functional capabilities of children with disabilities.

The definition of an assistive technology device is very broad. Assistive technology includes technology solutions that are generally considered instructional technology tools, if they have been identified as educationally necessary. For example, a classroom computer with a word processing program can be considered assistive technology for a student who demonstrates difficulty in writing and spelling. Assistive technology devices can be purchased from a local store or a vendor that specializes in the production and sale of assistive technology devices. These devices often need to be modified or customized to meet the individual needs of a student with a disability. For example, a computer keyboard may need to be adapted through the addition of tactile locator dots for a student with a visual impairment.

As an example of the assistive technology are the Academic and Learning Aids, which are electronic and non-electronic aids such as calculators, spell checkers, portable word processors, and computer-based software solutions that are used by students who has difficulty achieving in the educational curriculum.

A tremendous variety of assistive technology is available today, providing the opportunity for nearly all people to access information technology (IT). IT products must be designed and created in ways that allow all users to access them, including those who use assistive technologies.

Inclusive learning:

Inclusive learning is “required to provide a qualified student with a disability an opportunity to benefit from the school district’s program equal to that of students without disabilities” (Pilon, 2013).

There are many ICT accessibility barriers in education, including inaccessible curricula for students who are blind, deaf, hard of hearing, or who have learning disabilities or mobility impairments. Other examples include lectures and videos that are not captioned, visuals that are not described, and information presented on a whiteboard that cannot be read.

Assistive technologies can address some of these access issues. Screen readers can help students who are blind access the curriculum. Captioned videos allow students who are deaf to access the content.

Screen magnifiers enlarge the contents of the screen allowing students with low vision to read printed information and see images and other information clearly. Speech recognition, including for speech-impaired persons, can break down barriers in unprecedented ways. These tools also can empower students to self-accommodate. Self-accommodation can allow students to understand which accessibility features to use when accessing digital interfaces, including activating captions, using a screen reader, adjusting an operating system settings, or plugging in a switch in a computer or mobile device.

International experiences & Best Practices:

The Convention on the Rights of Persons with Disabilities:

The Convention on the Rights of Persons with Disabilities (CRPD), adopted by the United Nations General Assembly in December 2006 and entered into force in May 2008, requires signatories to ensure PWDs the full enjoyment of human rights and equality under the law. Egypt was one of the early adopters of the CRPD, signing the Convention on April 4, 2007, and ratifying it on April 14, 2008. (UN, 2007)

Accessibility is a key guiding principle of the CRPD: By signing the Convention, States Parties pledge to “enable persons with disabilities to live independently and participate fully in all aspects of life” by, among other things, promoting “access for persons with disabilities to new information and communications technologies and systems, including the Internet.” (Melish, 2007)

The emphasis on accessibility represents a deliberate shift in the conceptualization of disability in international human rights law, from a model of exception to a model of inclusion that focuses on the state’s responsibility to make society accessible to all persons on an equal and non-separate basis.

Today, many countries are taking concrete steps to attain the goal of web accessibility. A common trend is for nations to support and adopt the World Wide Web Consortium (W3C) Web Content Accessibility Guidelines and Techniques (WCAG), originally developed in 1999, updated in 2008 and recently adopted as an ISO standard.

The guidelines provide a ready reference of accessibility principles for websites, web software and website tools, as well as an easy means of assessing the accessibility of websites. These have been incorporated, either verbatim or in essence, within the policy frameworks of many countries.

UNESCO's approach

The adoption of the United Nations Convention on the Rights of Persons with Disabilities (2006) is highly significant, as people with disabilities, including children, often remain victim of discrimination and/or deprived of equal opportunities. It is the only United Nations human rights instrument protecting comprehensively the rights of persons with disabilities, including the right to education. The text, setting out a code of implementation, intends to protect specifically the rights and dignity of persons with disabilities. UNESCO contributed to the elaboration of its Article 24, devoted to education.

Approximate figures show that the situation is worrying with about 62 million children at primary school age having a disability around the world and 186 million children with disabilities who have not completed primary school education. (UNESCO, 2009)

Societies' misperception of different forms and types of disability and the limited capacity of social actors to accommodate special needs often place these people on the margin. People with disabilities experience inequalities in their daily lives, and have fewer opportunities to access a quality education that takes place in a truly inclusive environment.

In order to ensure equal educational opportunities for all without discrimination or exclusion UNESCO promotes a human rights-based approach to education. UNESCO is advocating for the inclusive dimensions of the right to education, notably through the implementation of the 1960 UNESCO Convention and Recommendation against Discrimination in Education, which provide an international legal framework for the protection of the right to education and prohibit any form of discrimination, including any distinction, exclusion, limitation or preference.

To monitor the implementation of the right to education UNESCO regularly launches periodic consultations of Member States, which are requested to submit reports highlighting the situation as well as progress and difficulties. Eight

consultations have been conducted so far on the implementation of the Convention and Recommendation against Discrimination in Education.

Efforts for integrating students with special needs into the regular school system have been deployed in many countries, such as Bahrain, Estonia, France, Georgia, Germany, Iraq, Morocco, Nauru, New Zealand, Poland, Serbia and Sri Lanka. These policies aim at ensuring the learning environment is inclusive of all groups and encourage the participation of persons with disabilities. For example, Iraq developed a strategic national project of educational integration for comprehensive education, which aims at improving the quality of education provided to children with special needs. This comprehensive education strategy has been reported to contribute to promoting the establishment of a community involving all children and youths regardless of nationality, age and ability and with respect for differences and non-discrimination. This project includes children with varying types of disabilities and impairments (e.g. physical disabilities, visual or hearing impairments, learning difficulties, speech and communication problems) and has been extended at the governorate and district levels.

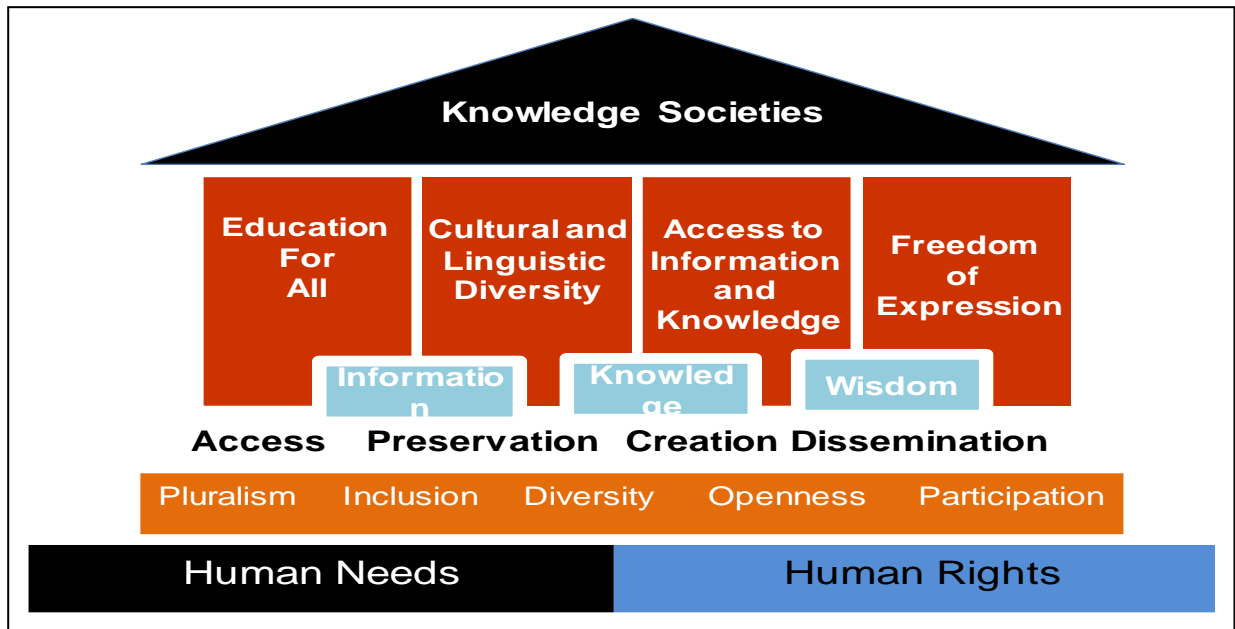
Other countries such as *Croatia, Cuba, Ethiopia, Ghana, Kuwait and Philippines* report on the coexistence of common general education institutions and special institutions delivering special programs. For example, in Ethiopia the Ministry of Education adopted its first strategy of Special Needs Education in 2006 to help ensure access and quality education for marginalized children and students with special educational needs, especially children with disabilities. Different universities and colleges have started new teacher education programs on special needs education; core curricula have been modified for children with disabilities and manuals were prepared on disability; special needs education has been mainstreamed across all teacher education and training institutions in the country. Reforms in the field of special education have also been undertaken, especially to improve admissions and mechanisms, in order to offer programs that address the learning needs of students with disabilities and foster their participation.

Making education accessible

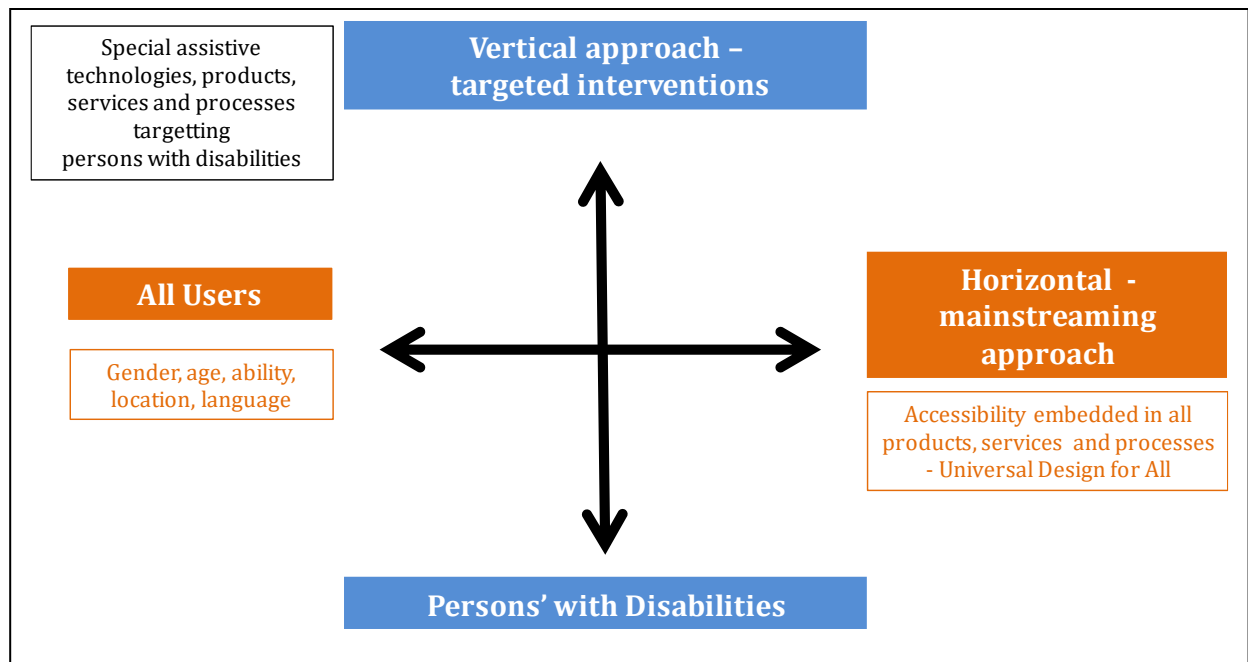
The majority of the countries have reported active steps towards ensuring the accessibility of education through specific material and financial support. A wide range of measures have been devised to facilitate access to and participation in the education system. As people with disabilities often encounter barriers to access infrastructures that are not physically accessible to all, many countries (notably France, Iraq, Latvia, Mauritius and Morocco) reviewed the

way school buildings, facilities and their accesses are designed to remove physical obstacles that prevent people with disabilities from enjoying their right to education. Adaptations include the creation or modernisation of ramps, lifts, public facilities, sanitation, as well as the provision of appropriate academic service and special care. In Barbados, efforts have been undertaken to upgrade facilities to make them more accessible. In the first phase of *Edutech Programme*, one school for the Deaf and Blind has been retrofitted with an elevator, acoustic floors for dance, and relevant modern technologies such as large screens, braille printers and special audio software.

UNESCO has developed a framework to implement the CRPD and provide



guidance for all member countries to develop projects to fulfill their commitments towards this segment.



The US experience:

However, the history of education for students with disabilities has, until relatively recently, been marked by exclusion, not inclusion. Prior to the enactment of the landmark Education for All Children Act (also known as Public Law 94-142), only one in five students with disabilities in the US were educated in public schools. Moreover, many states had laws on their books that explicitly excluded many students with disabilities from public schooling including children who had been labeled deaf, blind, emotionally disturbed, Education Programs, 2007. Other states “permitted” public school programs for certain groups of students with disabilities but did not require it. Before the implementation of Public Law 94-142, New York State, for example, permitted school districts to provide an education to students with IQs below 50 (Harrison, 1958). In the early 1970s, over one million children with disabilities in the US were completely excluded from public education and another 3.5 million were not receiving appropriate services (Martin, Martin, & Terman, 1996).

The Meaning of Inclusion as noted earlier, in many places in the US inclusion is defined as students with disabilities spending more than 80% of their school day in regular education settings (Baglieri et al., 2011). From this perspective, inclusion necessarily entails some exclusion. The practice of limiting (some) students’ participation in general education settings is consistent with the principle of educating students with disabilities in the least restrictive environment which presumes that regular classroom settings are not always the most appropriate placements for students with identified disabilities. The

assumption here is that for many students with disabilities, because they are deficient in crucial skills and abilities, it is appropriate for them to be excluded from regular classroom settings for at least part of the school day. Put another way, students with disabilities are permitted access to regular education settings only when they have proven they can fit in, when they are able to perform within the “normal range” for their age.

A Deficit Perspective On Inclusion:

From a traditional (deficit) special education perspective, the meaning of inclusion follows the legal requirement that students with disabilities be educated in the “least restrictive environment” (LRE). The assumption is that the regular classroom is the LRE for every child but not necessarily the most appropriate placement for all children (Hyatt & Filler, 2011).

A Social Constructivist Perspective:

Inclusive education is characterized by presumed competence, authentic membership, full participation, reciprocal social relationships, and learning to high standards by all students with disabilities in age appropriate general education classrooms, with supports provided to students and teachers to enable them to be successful. (2011, p. 1) (Dudley-Marling & Burns, 2014)

Challenges in the Egyptian context:

The Egyptian government realized the importance of the inclusion of the 15 million Egyptians with Disabilities since 2007, when it signed the United Nations Convention on the Rights of Persons with Disabilities (CRPD). However, serious steps towards the implementation of this convention were not taken until after the 2011 Egyptian revolution, which called for attaining social justice. In 2012, the government established the National Council for Disability's Affairs (NCDA) as a coordinator between various authorities concerned with Persons with Disabilities (PwDs)

Although the Egyptian law commits employers (both government and private sector) to employ a minimum of 5% of their workforce from PwDs, unfortunately this target is rarely met. In many cases, employers hire PwDs just to meet the target set by the law and no real work is being assigned to them. This intensifies their exclusion from the society, breach their rights as human beings, and prevents the well utilization of a considerable percentage of the workforce, which is wrongly perceived as a burden on the society. The main reason behind this phenomenon is the poor skills of PwDs, as usually they were not offered a quality education, or proper opportunities to enhance their skills and build their capacities. In addition, the availability of accessible technical and physical training institutions and programs is very limited.

In 2012, the Ministry of Communications and Information technology (MCIT) launched its comprehensive strategy for the utilization of ICTs to empower PwDs. Such a strategy was developed in full cooperation with PwDs in a public participatory approach. MCIT strategy supports, to a great extent the realization of the CRPD through, among others: 1) providing equal continuous education, training, and employment opportunities to PwDs; 2) promoting employment opportunities and career advancement for PwDs in the labor market, as well as providing assistance in finding, obtaining, maintaining and returning to employment; 3) enhancing access to knowledge and providing better communications channels; 4) supporting the development of ICT based assistive technologies which support the Arabic language; and 5) promoting awareness of the capabilities and contributions of PwDs.

In order to meet the previously mentioned challenges, the Ministry of Communications and Information Technology (MCIT), launched the "Life Long Learning for Persons with Disabilities" (LLL4PwDs). The program is a tool to contribute to building the capacities of PwDs in relation to Information

Technology (IT), in order to enhance their independence, inclusion and therefore empowerment.

The program consisted of two major grants (both were announced based on the request of PwDs). While the first aims at eradicating IT illiteracy, the second aims at qualifying PwDs for specific ICT related job opportunities. The program is conducted as a collaborative effort between the government, the public sector and the private sector. In order to be able to provide such services, MCIT focused not only on providing a high quality training for PwDs, but also on enhancing the technological accessibility of several training centers and ICT companies as well as expanding its network of cooperation.

PwDs need intensive capacity building in order to be able to utilize ICT as a tool for communication and knowledge acquisition, and to be qualified for the jobs offered by the ICT private sector. In addition, PwDs need skills enhancement regarding integration in the work environment. This program is the first Egyptian specialized program to target capacity building and employment of PwDs using ICT. The program offers two grants: “The International Computer Driving License for PwDs” (ICDL) Grant and “PWD’s Training for Better Employment” Grant. The program managed to benefit 1073 persons with different disabilities and to employ 83% of the graduates of the “PWD’s Training for Better Employment” Grant. The program was carried out through different techniques as follows:

- **Eradicating ICT illiteracy for PwDs:**
ICDL grant was offered to PwDs in 8 Governorates, the program identified IT accredited training centers and institutions which can provide accessible ICDL training. The technical accessibility of such centers were enhanced with the help of MCIT, whenever needed. This grant eradicates IT illiteracy for PwDs, allowing them to be connected to the world by offering better communication and knowledge acquisition tools. In addition, equipping PwDs with IT skills improve their productivity at work and support their career path. The programme offered 606 grants and contributed directly to the employment or enhancement of employment of 67% of all beneficiaries.
- **Training for Better Employment:**
This program focused on equipping PwDs with the required technical skills to fit for pre-defined job opportunities related to the ICT sector, as well as equipping candidates with soft skills to be able to integrate into the work environment. This grant benefited 467 PwDs (those who employed through

this grant are working at big ICT companies such as Xceed, ability call center, etc). This grant included the following:

- Pre-training Psychometric test were carried out by specialists to help in directing candidates to the most relevant job opportunities by analyzing their abilities and personality in relation to the demands of a particular job, and therefore provide them with the suitable technical training.
 - Ensure training facilities and materials are accessible
 - Provided a number of technical and non-technical courses by PwDs, this was very beneficial in preparing PwDs for the challenges that they might face at the working place and recommendations on how to overcome them.
 - On job training to ensure integration into the work environment.
 - Online application to the program was offered on a highly accessible website, www.tamkeen.gov.eg, in order to reach as many beneficiaries as possible.
 - Candidates had the opportunity to enroll in one of three training schemes: Tele-sales, call center agents, administrative work. For the renewed program, started in April 2015, mobile and compute maintenance-training courses were added. All candidates were offered the soft skills and personal development including communication skills, interviewing, and basic workplace etiquette.
- Mentoring and coaching
A supporting group for the employed PwDs was formed in order to support them with any challenges arise in relation to integration into the work environment, as well as any other technical or non-technical obstacles for the first 3 months after the start of the hiring date. In addition, the group managed to demonstrate to skeptical PwDs, that there is always a possibility for success and consequently attracting more potential trainees.

Case Study:

The program faced a number of challenges; however, the responsible team managed to take relevant mitigation measures:

1. On the strategic level: Due to the prevailing negative mindset about PwDs, their abilities, skills and level of productivity, it was difficult to find and align with partners and to convince the private sector to employ PwDs. This has

been mitigated by continuous discussions and presenting best practices in other countries to potential partners.

2. On the economic level: Due to the recent changes in the political situation in Egypt and the accompanying economic challenges, companies were minimizing their spending through, among other, laying off employees. This made employing PwDs at ICT companies an extremely difficult process, in particular at the beginning of the program. This was overcome by the creative cooperation model established with NGOs, which partially supported the salaries of PwDs over the first year of employment. In addition, required specialized SW for accessibility were provided to the companies by MCIT.
3. On the operational level: Since this program is the first intensive one for the utilization of ICT to the employment and capacity building of PwDs, there were many challenges related to the operation as follows:
 - Only few centers were equipped to train PwDs. This was mitigated by helping other centers to have the required accessible IT infrastructure and SW.
 - The courage of PwDs to be enrolled in this program, which is a result of the exclusion practices they experienced for quite a long time, and therefore the number of applicants, was low during the first year of the program. This was mitigated through collaborating with more NGOs to disseminate information on the program and conducting more than 25 awareness-raising sessions (separate sessions and at relevant conferences and events), where success stories were represented and therefore raise PwD's level of confidence. Another mitigation measure was communicating the program to all government, ministers, and universities' presidents.
 - As for the ICDL grant for PwDs, there was a conflict between the company responsible for the ICDL in Egypt and the training provider, therefore the grant stopped for more than 6 months, which affected the number of graduates. While finding a similar certificate and starting negotiations with them, the ICDL resumed its work in Egypt. However, the other equivalent certificate will be provided as a grant for PwDs as well to minimize the risk of any future obstacles with the ICDL.

Another initiative:

In August 2014, G3ict presented a seminar on “Inclusive ICTs for Education” in Cairo, Egypt, for educators and officers of the Egyptian Ministry of Education. The Arab Republic of Egypt’s Ministry of Communications and Information Technology (MCIT) hosted the seminar. It was funded by in part by the Information Technology Industry Development Agency (ITIDA).

The seminar focused on the following objectives:

- Raise awareness about the benefits of Inclusive ICTs for education.
- Promote Inclusive ICT solutions that can be implemented today in education.
- Review the Model Policy for Inclusive ICTs in Education for Persons with Disabilities

http://g3ict.org/resource_center/publications_and_reports/p/productCategory_whitepapers/subCat_10/id_322

The seminar was an opportunity for key stakeholders to review and discuss how to leverage the Internet and modern ICTs to improve the lives of PWDs. In particular, the seminar was an opportunity to assess the potential of the Internet to integrate those with disabilities into modern life. The government of Egypt recognized this gap and the necessity to eliminate the exclusion of PWDs from education opportunities. To fulfill this, MCIT started implementing the following initiatives:

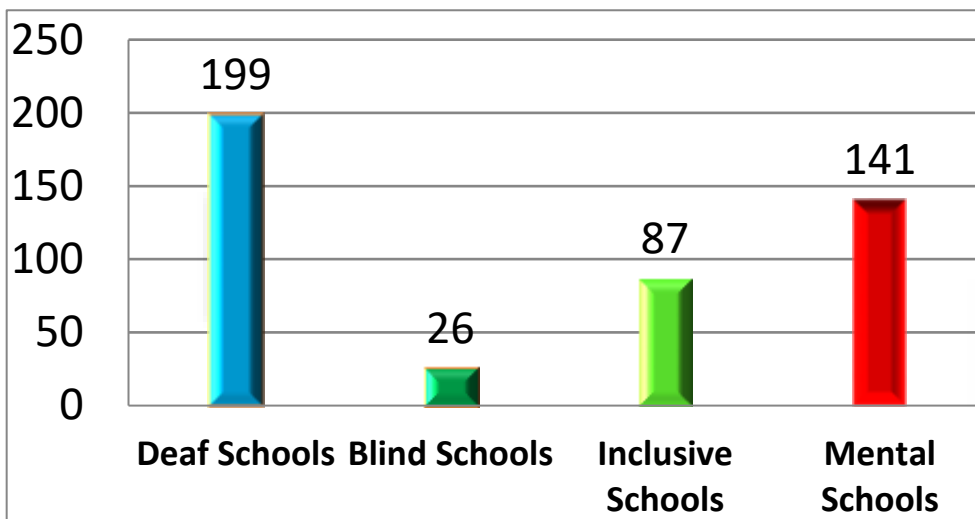
a. Initiative of a thousand schools for people with disabilities

The project aims to develop the educational environment for students with visual, audiovisual and mental disabilities at the national level and to integrate students with minor disabilities into general education schools by developing the educational means of these schools and providing them with the necessary hardware and software to achieve this goal.



Special education schools for the blind

- The pilot phase of the project was completed in 35 schools in Fayoum, Beni Suef and Aswan governorates, which benefited about 500 students with disabilities.
- The 1,000 Schools for People with Disabilities initiative was launched in December 2013 and aims to develop all disability schools nationwide, benefiting 50,000 students.
- All special education schools for blind people at the level of the Republic (26 schools), which include some 3,000 students and students with visual disabilities, have already been supported.
- The provision of support for deaf and hearing-impaired schools has already been completed as a first stage.
- A total of 141 schools have already been supported as a first stage, and 87 schools of educational integration have been supported nationwide.



B- Digital academic Dictionary for unified Sign Language

- The project aims to serve more than 15 thousand deaf and hearing-impaired students through the launch of an electronic dictionary for the unified sign language. The signs used in all deaf and hearing-impaired schools are used throughout the republic, which eliminates the problem of large differences in sign language resulting from different geographical environments , The development has been completed



Digital Dictionary for unified sign language

Partners: Ministry of Education and civil society institutions working in the field of deaf and hearing impaired

C. Teacher Training Project for People with Disabilities Schools

- As the teacher is one of the most important axis in the educational process. In order to make the most of the technological support projects for the schools of the disabled and the integration schools carried out by the Ministry of Communications and Information Technology, the Ministry launched a project to train teachers in these schools on the basics of computer, Disability, and the standard sign language electronic dictionary, which aims to train 5,000 teachers by the end of 2016 and 25,000 teachers by the end of 2019.

Partners: Professional Academy of Teacher, Ministry of Education, Microsoft Corporation.

Results:

The researcher has conducted a number of interviews with some of the top and middle management of companies, where graduates of the “Life Long Learning for Persons with Disabilities” (LLL4PwDs) program have been employed. SICO company General manager showed his pleasure of the performance of the deaf people hired by his company after getting their training. He said that they perform in a different manner than others and are more productive as they take less breaks and are more dedicated and do not waste their time in office politics. Another feedback from the Top management of Xceed company was about blind employees when they are trained they used to work in call centers as they have

good memories but when Xceed and Vodafone began to employ more than one intake they began to explore their real qualifications and began to try them in new jobs like HR and Business development departments.

This program had an economic and social impact towards this segment as when they are well educated and trained, they began to be productive in the society instead of being a burden on the society.

Conclusion

In the field of capacity building and employment for PwDs, MCIT's Life Long Learning and Employment for PwDs program is the first of its kind in Egypt. This directly fits with the current policies of the Egyptian government to empower PwDs and improve the quality of life in order to attain social justice. The program is also conducted as part of MCIT's comprehensive strategy to empower PwDs through ICT.

The program managed to achieve its objectives and targets of combatting IT illiteracy for PwDs, hence provide them with reliable tools for knowledge acquisition, and offer them new channels for communications. In addition, it supported their integration into the workforce at the ICT sector through training for specific job opportunities.

Moreover, the program was successful in mobilizing different stakeholders of the society to partnership in order to support the capacity building and employment of PwDs through an innovative Public Private Partnership approach.

The direct impact of the program on PwDs was clear in terms of the number of graduates and trainees, with high employment rates and proven impact on PwDs' productivity and career path. The demand on the renewal of this program is intense, not only from PwDs, but also from the ICT companies which are willing to hire more PwDs. This indicates that the capacity building of PwDs was of a high quality and that such a program managed to change the mindset of companies' owners regarding the abilities of PwDs to join the workforce. An indirect impact of these programs is the increase in the number of technologically accessible ICT companies and training centers.

The sustainability element is at the core of the programs' idea and design. The program is based on qualifying PwDs in the field of IT; breaking communications barriers as well as job market entry barriers; and giving PwDs the opportunity to prove their competencies. This creates a market value

for PwDs and position them at a proper place at the job market and therefore develop them as independent active members of the society who are able to support themselves and their families. It is also important to note that the achieved results of the programs is bringing more partners.

The “Life Long Learning for Persons with Disabilities” (LLL4PwDs) program was very relevant to share in solving the unemployment problem.

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