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A Source of Inspiration: ATC for Visually Impaired Students at the Islamic University of Gaza

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Abstract

In the age driven by information technology, each university has a mission to equip its students with the necessary tools. The Islamic University of Gaza (IUG) offers all of its student access to the computing world and online classes. In order not to leave anyone behind, IUG established an Assistive Technology Center (ATC) for the visually impaired students. In this paper, the ATC is presented as a case study. The structure, resources, achievements, problems, future plans and project are displayed.

individuals with disabilities and enable them to have greater independence, productivity and confidence at their home, at work, at school or in the community [5]. AT in Education is defined as products and services which assist in the learning process such as computers, and communication aids [6]. Using text-to-speech technology enriches learning by having the computer highlight text and read it aloud as the student follows along [7].

Web accessibility is the process of making Internet sites and Web applications compatible with assistive technologies. Accessibility violations occur when Web sites violate accessibility requirements.

1. Introduction

1.1 Background

The information and communication technology age is the backbone of a knowledge-based economy where the fittest survive whether they have disability or not. Visually impaired can now compete on equal footing with the sighted on the basis of knowledge and technological competence.

The Internet has presented new ways to learn. With the help of assistive technology (AT), the world of the blind and visually impaired has expanded [1].

Studies have shown that assistive technologies help people with disabilities to enjoy a more satisfactory life [2]. Computers as AT are frequently cited as the means to overcome the lack of access to information and other environmental barriers for persons with visual impairments [3, 4].

1.2 Assistive technology (AT)

AT can be defined as any piece of equipment that is invented, modified, or customized to increase, maintain, or improve functional capabilities of

1.4 Motivations and aims

This paper presents the Assistive Technology Center at the Islamic University of Gaza as a case study. It shows the center's capabilities, resources, and achievements and at same time identifies barriers ways to overtake them in order to facilitate a better inclusion of visually impaired. It also analyzes the current situation and makes recommendations.

The paper is organized as follows: section 2 talks about the Islamic University of Gaza and its ATC; section 3 displays ATC achievements; section 4 talks about the problems and challenges facing the center; section 5 displays future plans; section 6 concludes the paper.

2. ATC at the Islamic University of Gaza

2.1 Islamic University of Gaza (IUG)

The Islamic University of Gaza (IUG) is the leading institution for higher education in the Gaza Strip. IUG has over 19,000 students and over 900

teaching instructors. Over the last five years, IUG started to offer online courses through WebCT and supplement courses with online materials.

2.2 Assistive Technology Center (ATC)

The ATC was established in November 2000 with the financial support of the American Friends Service Committee, Quaker Palestine Youth Program, Canada Fund, and the Wild Geese Foundation (Holland). ATC is open to all members of the community. Established from a consensus that visually impaired students at higher education institutions in the Gaza Strip encounter difficulties in academic life as a result of a lack of access to print, ATC is the first university-based assistive computing center in Palestine.

The mission of the center is to enable people who are blind or partially sighted to achieve their full potential. A primary goal of ATC is to improve the outcomes and results for visually impaired students through the use of assistive technology to access educational materials and classes.

The main objectives of the ATC comprise:

1. Ensuring information and materials are accessible for blind and partially sighted students in various formats.
2. Providing customized training courses on a wide range of adaptive technology issues.
3. Enhancing retention rates and academic achievement of blind and partially sighted.
4. Increasing the self-esteem and independence of blind and partially sighted students.
5. Increasing public awareness of the role and importance of assistive technology in the school.

ATC provides the following services:

- Awareness activities about Assistive Technology
- Technical assistance in selecting AT devices
- Assistive technology assessments and evaluations
- Training on specific devices / software
- Specialized workshops and group training
- Braille materials production (production of books in Braille & large print).
- Specialist training (Braille learning, Orientation mobility).
- Communication (access to Internet, e-mail)

2.3 ATC resources

The following devices are available at ATC: alternative keyboard, Braille embosser, alternative mouse, screen reader, speech synthesizer, and speech recognition software. The center is building its own library by reproducing reference books and publishing textbook. The center distributes the produced textbooks to students and continues to

build its own library. The center also keeps local newspapers, and magazines available to its students through the center web site. It now provides academic support in the form of curriculum materials in Braille or large print.

3. ATC achievements

Over the last five years, 251 books were printed in Braille plus 973 textbooks and 277 magnified copies were distributed to students.

With cooperation between ATC and the Academic Affairs Office, special exam *sessions* were held for visually impaired students. The number of visually impaired students at IUG increased significantly as illustrated in Table (1).

Table (1) No. of students enrolled at IUG

Academic Year.	No. of Students
2001/02	8
2002/03	19
2003/04	24
2004/05	14
2005/06	18
Total	83

3.1 Achievements and strengths

Students developed new skills like using assistive technology and programs such as Braille terminal display, Sakhr for reader machine, Jaws and Zoom Text. The following skills were obtained: typing, filing word documents, and surfing the net. A TOT course was conducted for Jaws program since it supports all other programs used by the visuals. One of trainers was sent abroad to attend a training course in using assistive technology.

A group of trained students are taking their exams using computers and they feel comfort with it. One of graduates is typist for a magazine for the Women Affairs Center. ATC graduates received employment with the Ministry of Housing, Ministry of Religion Affairs, and ATC as trainers. Recently, a group of ATC graduates started a radio station for the disabled people.

3.2 Active participation and initiatives

ATC students established a new magazine titled Afaq printed in Braille. Students gained self-esteem insisted that they became dependents on themselves.

ATC is sharing its experience and expertise with others institutions such as Palestinian universities in the West Bank for opening their own AT centers. Currently the ATC is running a series of customized training programs for Alaqsa University, Al Noor Center and the League of Graduates who wish to learn how to use the specialized equipment. The Assistive Technology Center had established the First Technology Summer Camp at summer 2003.

4. Problems and challenges

- Some students can't differentiate between the blind and the partially impaired. The latter prefers a visual trainer to train him while the former prefers blinds as they have their own programs which they are familiar with.
- The space is limited and can't meet the demands.
- Trainees indicated that the training period was too long (6 months) to learn Windows, WinWord and Internet.
- Weak English language proficiency leads to problems in understanding some of the programs applications.
- There were technical defects in some programs especially Sakhr and Visio Braille when using Internet. A new version of Sakhr program and similar programs are available in the market but ATC can not afford to buy them.

5. Future prospects and projects

The Center is now very much interested in developing digital talking books (DTB) to broaden students' access to information. In April 2002, the AT Center based at the IUG has begun experimenting with various programs to synchronize Arabic texts with speech output. The results have been promising.

Computer-based instruction can make possible independent participation in activities related to the curriculum. ATC is working in cooperation with the e-learning Center in developing computer-based instructions. A regional Arabic virtual university for the visually impaired should be established.

6. Conclusion and recommendations

The ATC established to help its visually impaired students to compete with other students. The ATC enjoyed a great success over the last five years where it was able to make a difference in its students and graduates lives. But, it also faced problems and

challenges that needs to overcome and made plans to do so. Basically, this paper presented the ATC as a case study where it looked into the center achievement and challenges.

The paper makes the following recommendations:

- ATC should emphasis quality in training and education.
- ATC should maintain a plan to reach all students who didn't take any.
- ATC should increase its pole of trainers.
- ATC should secure funding to buy laptop computers and supply it with the necessary programs for its students.
- ATC should develop a close cooperation with the e-learning Center and keep a close eye on the developed skills of its students to ensure that they are not left behind.

7. References

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