



Assistive Technology in Education: Screen Magnifier

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Abstract

Technology, which basically helps human do things easier, has also emerged in helping learners perform a better learning. This descriptive study explores the screen magnifier as assistive technology in education which is installed in many electronic devices for visual assistance. It also pinpoints how the technology works, characteristics of the students who use the technology, issues of the technologies use in the classroom (including costs). The study indicates that screen magnifier is crucially important for low vision students because most learning activities require a lot of intensive eye sight. Furthermore, the users may find screen magnifier easy to install and to use. Besides that, this study suggests that students also get accommodation besides using Screen Magnifier individually in the classrooms.

Key Words: Assistive Technology, Screen Magnifier

1. Introduction

Education is one of the most important needs of human beings. Therefore, it has to be able to reach all people with no exception that makes it barrier-free. To help achieve an equal opportunity for prevalent education, for either general students or disabled ones, educators need assistive technology.

Lewis (1994) cited in ATTO Buffalo defined Assistive Technologies as the device and scenarios that operate to free the technology use for all students and assist them to interact and learn. These technologies enhance capabilities and reimburse the physical limitation. So, people with physical

limitation are expected to get the intake as much as other students and even advance in their own ways. In addition, assistive technology products which are aimed at giving chances for students who have cognitive difficulties, impairments, and disabilities further or extra access to technology are widely invented, offered and used. However, the selection of the technology or the device should be suitable for the needs of particular disability experienced by the students (Allan, n.d.).

Nowadays, the roles of assistive technology in education have been crucially important for the students with physical impairments which

include impairments in vision, hearing, movement, etc. Thus, this paper is going to explore the use of screen magnifier to help students with low vision impairment.

Based on The Vision Council (2015), low vision is the visual limitation which is not able to cure by surgery, pharmaceuticals, glasses, and contact lens. This is marked by partial sight like the obscure vision which can impact all ages especially the elderly. The symptoms of the low vision have three different aspects, according to the U-M Kellogg Eye Center (2015), which are “difficulty recognizing objects at a distance,” “difficulty differentiating colors,” as well as “difficulty seeing well up close.” Therefore, this symptoms and condition need special attention especially for students so that these situations do not hinder the students from taking advantages in the classrooms.

2. The Assistive Technology

Screen magnifier or screen enlargers are the tools attached to computers like Windows (Microsoft), Mac OS, and Linux which works like a magnifying glass which the main function is to enlarge computer screen partly so that the objects or writing on the screen more eligible and easy to see. This allows the user to zoom in and out on specific areas of the screen (Microsoft, 2015).

The products of screen magnifier are Dolpin Lunar, Virtual Magnifying Glass, and ZoomText. ZoomText provides people various sizes and different types of fonts (Huffman, 2006). In addition, screen magnifiers usually include extra features like contrasting background and text colors, mouse pointers and extended cursors, and some basic reading functions (Fecich, 2012).

3. How Screen Magnifier Worked

Screen Magnification can be easily downloaded. People can also use program CD to insert into their disk drive and it can be installed automatically step by step. After it is being installed on a computer, users can start using it.

Based on ZoomText Guide (n.d.), if Setup does not start automatically, following actions should be taken: click on the Windows “Start” button and select “Run”, browse to your CD-ROM drive, Select the Setup program and click “Open” and finally click OK in the Run dialog box. After that, click on the icon. For instance, if you use ZoomText, you could find the icon in the right corner of the screen. When it starts up, it changes your display to a magnified view of the normal screen. As you move the mouse, type text and navigate your applications, the magnified view will automatically scroll, keeping the area of activity in view. Furthermore, if you have installed ZoomText magnifier/reader, it will also speak aloud, narrating your actions as you work with your documents and applications.

Although this screen magnification application is running, the rest of Windows program keep running normally. This allows users to navigate to the other application in the computer which does not need screen magnifier services. So, users can do multi activities at one time without having to specify the task on the magnifiers.

4. Characteristics of students who use this technology

Students with visually impaired are the main users of the Screen Magnification. These students



have a reduced stage of sight which cannot be entirely helped by conventional glasses. Unlike being blind, these students still have some useful vision. However, they still have difficulties in performing daily activities like reading and driving. Students with low vision usually cannot discern images (Especially at a distance) and discern colors in similar resonance (Wicker, 2015).

There are many factors that can cause this impairment for children as well as adults. One factor is a birth defect or injury. For Students, this impairment can affect their learning effectiveness. Therefore, they need special attention and instruction from the very early stage. In addition, children with low vision need additional help to socialize with other children and adults (Segre, 2015).

Furthermore, Students who need this assistive technology usually have problems perceiving objects from far distance such as street signs or bus signs, problems in differentiating colors such as the distinction between green-blue-violet, and problems in seeing well up close like reading or cooking (Wicker, 2015). These problems are potentially dangerous for the students because most learning activities involve the use of far vision (like writing on the board), and reading from both paper-based and electronically from the screen of the computer.

An advantage of using this technology is that this technology is not only beneficial to low vision students but also useful for functional blindness people. Although reading from the screen is not easy for them, visually impaired people also could get knowledge from the Internet through this technology.

5. Issues of the technologies use in the classroom including costs.

There is no doubt that everything has two sides, Screen Magnifier has also some issues of the technology's use in the classroom. It is obvious that the first step of using this technology is using a computer. Thus, the primary prerequisite skill for students is touch typing. Students who cannot see the keyboard or aren't able to type on the computer need to use touch typing instead of "hunt and peck". Therefore, in the classroom, before the students using Screen Magnifier, teachers need to run a typing course for visual impaired students (Scheiman et al, 2007).

In addition, after teaching the touch typing skills to students, the teachers need to help them set up of Screen Magnifier. Moreover, providing some special training for students is also important, such as how to install on the computer as well as how to use the Screen Magnifier system.

Rao explores some other general facts regarding students with low vision in the classroom. (1) Encouraging the students to use their eyes since the greater efficiency is gained from visual assignments except doctors forbid it. (2) The visually impaired child should be able to join leisure activities which do not necessarily need of good visual sight. (3) Low vision eyes can be tired easily, allow students to change focus. (4) If it is necessary, allow the students to hold the reading materials close to their eyes at their convenience (n.d.).

Furthermore, there are also some suggestions for classroom teachers. Based on Rao (n.d.), teachers should provide preferential seating for a student with low vision, allow the students choose their seat but make sure it is close to the board, reduce glare from windows and light as much as

possible, give more time to complete the assignment because they are basically slow readers, and check the procedures to conduct standardized test which is potentially difficult for low vision students.

The technology for low vision students does not necessarily require a lot of costs. Screen Magnification, in this case, is provided free service and compatible in any operating systems (Like Windows, Mac, Linux, etc.). Many providers provide this free service to show their commitment to providing an easy access computer for low vision people.

What should be taken as considerations, however, is the needs for students to able to participate in the classrooms which lie in the teacher's decision. Teachers should be able to facilitate and to accommodate these low vision students as has been explored in this writing.

6. Conclusions

Screen Magnifier is very important for low vision people, especially for students. This is crucially important because most learning activities require a lot of intensive eye sight. One of them is reading on a computer screen.

The application of screen magnifier is surprisingly easy to install and to use. Short browsing on Google will allow the user to find and to download Screen Magnification from the Internet. Then to activate this application is relatively easy. Just to follow the Icon, users can activate it by using mouse and cursors. Users can easily magnify the screen as comfortable as they want. In addition, they can also adjust screen color to help them read.

Besides using Screen Magnifier individually, students should

also get accommodation in the classrooms. Their teachers should be able to understand low vision students need such as seat arrangement, various activities, etc. This special treatment will allow low vision students to gain about the same amount of knowledge and contribute better to learning the process in the classroom.

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