

[P25] Supporting online learning using assistive software: an evaluation of ScreenRuler

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Introduction

Assistive software is designed to enable access to a computer interface for people with a range of disabilities. At Newcastle University we currently have a range of assistive software available across the campus computer network but much of this software, such as screen-reading and text magnification packages, is complex and requires significant training before it can be used proficiently.

ScreenRuler, produced by Claro Software¹, is designed to be easy to use and with limited but specific function: an alternative to 'feature-rich' software packages that are too complex for the intended user group (Blenkhorn, 2005). ScreenRuler provides a x2 magnified movable ruler of changeable width across the screen to assist with on-screen reading. Text is only magnified in the vertical plane, increasing vertical mouse movement to traverse the screen, but not introducing additional horizontal movement. This distorts the text slightly but does not reduce readability. The magnified ruler can invert colours and the unmagnified screen above and below can be independently darkened to increase contrast against the ruler. TechDis and the HEA Bioscience Centre purchased five ScreenRuler licences to trial within the Faculty of Medical Sciences at Newcastle University.

The School of Medical Education Development delivers academic IT teaching to undergraduate and postgraduate students within the Faculty of Medical Sciences. Three courses are delivered using online tutorials which involve a lot of on-screen reading but also require interaction between different types of software including Word, Excel and an internet browser.

This trial originally aimed to identify the benefits of using ScreenRuler in conjunction with online tutorials to assist students to read the information in the courses. An investigation into attitudes towards this software and perceived benefits was also conducted, to gauge how successful uptake of this or similar software might be if used in e-learning.

Results and Discussion

The software was installed on one machine in each of the five main clusters within the Faculty building. Students working through online IT tutorials and completing their own work, in particular on-screen reading, were asked to participate in the study. 16 students provided feedback on the software.

Student opinion changed significantly as students became accustomed to viewing the slightly distorted text and moving the mouse to reveal text immediately above and below

the magnified area. Most students using ScreenRuler for on-screen reading considered it helpful software; most students completing more varied tasks considered it a hindrance. 66% of students said they would use it again for on-screen reading and only one student considered that not being part of the target audience would discourage them from using the software.

Three key findings are prevalent from this research.

Users require time to adjust to ScreenRuler

The changes that ScreenRuler makes to the screen including the distorted text and hidden surrounding text, plus the additional mouse input required to operate it, require time to adjust to. The software is extremely easy to use and quick to load, but users need to adjust to the changes it enforces on the screen and with the input. This change does not take very long and users should be encouraged to persevere with the software whilst they adjust.

ScreenRuler is extremely beneficial for on-screen reading

On-screen reading is an activity which will increase as it continues to be routine to access journals and other academic work electronically. ScreenRuler is complicated to use for simultaneous activities, especially those that require much interaction with icons or require whole-screen visualisation (such as movies or pictures). However, it has great perceived (and actual) value for on-screen reading and therefore should be promoted on such merit. One student suggested that a 'hot key' to quickly turn the ruler on or off would increase the value of this software as it would enable discretionary use of the software during mixed tasks.

Unfortunately, the nature of the online tutorials delivered to Faculty of Medical Sciences students at Newcastle University negates the use of ScreenRuler because of the constant change of software environment and the switch between on-screen reading and completion of activities.

Being assistive software did not discourage users

It is encouraging that students were not inhibited from using the software if it demonstrated benefit to them, despite not considering themselves part of the target audience. This suggests that other assistive software packages that demonstrate benefits for a variety of disabled and non-disabled users, such as mind-mapping software and read-out-loud programs, may be well-used if promoted as aids to learning, for instance, rather than as assistive software.

Further work

The third finding from this project is worthy of greater investigation under two main areas. Firstly, whether the complexity of the software deters users and therefore whether highly usable software such as ScreenRuler and other Claro software packages would be of greater benefit to students than more complex but similar programs. Secondly, whether the way that software is promoted, either as an aid to learning or as assistive software, affects the uptake and perception of the software thereby leading to a change in software usage.

Conclusion

Software that is easy to use is likely to be used more frequently, and stigma associated with assistive software is likely to decrease if its use becomes more commonplace. Normalising the use of assistive software will improve the working environment for all users and will contribute to improving attitudes towards disability. It also has the potential for facilitating student interaction with electronic materials, thereby supporting the learning and teaching environment.

References

¹<http://www.clarosoftware.com/>

Blenkhorn, P. (2005) *Assistive Technology – A help or a barrier to access? : Balancing the Equation Conference*. University of Southampton, September 2005. Assistive Technology Service.