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The Challenge of Providing Accessible Distance Education Subject Materials

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ABSTRACT

Charles Sturt University is a leading provider of distance education in Australia. The University recognises its responsibility to provide access to study materials for students with print disabilities. This paper addresses our challenges, some solutions and future directions for production of text format and large print. The preferred methods of processing and storage of the study package information at the University's production facility are inaccessible to screen readers and time delay and expense involved in outsourcing transcription is a cause of concern. Cross-divisional support within the University for inclusive practices in design and production of distance education study materials requires change management. Disability Liaison Officers have developed guidelines for educational designers and worked with the production centre to observe their processing methods and determine a suitable interface with other software. Our future direction is to continue to monitor technological advances and promote cross-divisional responsibilities for the development and production of accessible format study materials at Charles Sturt University.

1. INTRODUCTION

Charles Sturt University (CSU) is a major provider of distance education (DE) in Australia. For Spring semester, 2002, 1800 subjects were developed, reviewed, produced and delivered to over 22,000 enrolled students in distance education courses. Most of these DE students live in Australia. Provision of a written subject package is still the most common method used by the academic staff to deliver the primary learning materials to CSU distance education students. The package typically consists of a subject outline, study guide, lecture material and a compilation of readings from a variety of sources. The subject packages are developed in a collaborative effort between CSU's educational designers and academic staff. The processes used by CSU were aimed at production for many students, with little recognition, flexibility or planning for the individual needs of students who may require an alternative format.

2. HISTORICAL PERSPECTIVE

2.1 Outsourcing

CSU students with a severe print disability who were non-braille users often requested their subject materials on audiotape before they acquired computers and screen readers. The

Disability Liaison Officers (DLOs) requested an additional hard copy of the subject from the production centre and the package was sent to the DLO and then to the Royal Blind Society (RBS) for transcription with any textbooks the students purchased. The benefits of using the RBS were that accurate material was produced for individual student needs for a fixed price. The disadvantage was that students often did not receive all materials prior to commencement of semester, or indeed, until well into the semester. Availability of the printed subject package also affected the response time. From time to time other options of outsourcing to private businesses came to our notice but the cost was always prohibitive. National Information and Library Service (NILS) is our current preferred external provider of transcription.

2.2 Delays in development and printing of subject material

The educational designers and academic staff are responsible for writing and formatting the subject material. Each subject is reviewed prior to the semester in which it is to be delivered. The subject outline is changed each session. Subjects are scheduled for a full review and rewrite every three years. Other minor changes in the readings and/or study guides may occur in the intervening period. To ensure all students enrolled in a subject receive the same subject material the DLOs need to access the actual package for the upcoming session.

The problems with providing the subject materials to students on time were threefold: delay in development of new subject material, delay in printing at CSU and delay in transcription at the RBS. If all three happened to one subject the student could be disadvantaged.

2.3 Inaccessible electronic format of readings

By the late 1990's our students started to use screen reader software on their computers and requested their subject materials in a text format. The subject outline, study guide and lecture material all written by CSU staff were obtained directly from the production centre in a text format saved to a floppy disk or CD ROM. The production centre's preferred method of processing and storage of the readings, however, was inaccessible to screen readers.

For students requesting large print packages the DLOs had to request a hard copy from the production centre and have it sent to the DLO at the different campuses and then send it back to the printery for photocopy enlarging. The production centre and the printery are adjacent buildings on the Wagga campus. This double handling was time consuming.

2.4 Budget restrictions

The DLOs recognised the potential for the University to produce the readings in a text format and as part of inclusive practice it was envisaged that the production centre was best placed to provide the service. This, in turn, would improve the staff's understanding of the needs of students with a print disability and perhaps strengthen the voice advocating for accessible subject materials. The production centre expressed that budget restrictions were the limiting factor in embarking on these new processes.

3. FALSE HOPES

3.1 Subject material on CD ROM

In 2000 CSU adopted new production technology and an offer by the production centre for all the subject materials to be given to students who preferred electronic text on a CD ROM was gladly received by the DLOs. We celebrated that at last we could produce our own alternative

format subject materials for eligible students. Unfortunately the DLOs soon became aware that the readings had been produced and saved in graphic portable document format, rather than a text format and the students' screen readers were unable to read the files. The production centre continued to feel restrained by the 1968 Copyright legislation and their own budgets and was not inclined to try other formatting possibilities. It was back to the old time consuming ways of getting the RBS to scan and edit.

3.2 Text converters

Text conversion sites were also assessed for our needs. The Adobe and Docmorph conversion sites were able to cope with the text converted to pdf but not the readings in the graphic pdf files. We already had access to the text files from the production centre so we did not pursue this further at the time.

4. RESPONDING TO THE CHALLENGES

It was clear to the DLOs that a process of change was needed to make real improvements in the provision of alternative format to students. The University needed to develop its own strategy for change:

- adopt a shared goal
- develop an overall strategy on how this would be achieved
- investigate the options to achieve the objectives

As with change in any organisation, resistance was expected. The adoption of the shared goal that CSU would try to produce at least some of the alternate format was passively received. Today there is, at least, realisation that the University must provide accessible subject materials in a timely manner. Time delays, non-attendance at meetings of key players, budget restrictions and investigating technological advances have all slowed the progress of implementation of CSU production of text format readings. The DLOs have continued to diligently work to press the issues forward.

4.1 Adoption of CSU disability policy

CSU recently reaffirmed its commitment to the provision of education for students with diverse needs in the adoption of the Disability Action Plan. The policy and objectives that relate to the provision of accessible study materials for students with print disabilities provide for inclusive practices in the design and production of subject packages. This sets a clear direction for cross-divisional support for collaboration in this area.

4.2 Information for educational designers -design of accessible study materials

The DLOs have developed a resource for the educational designers. They now have access to concise information about the possible implications of different disabilities and different technologies used by students. The resource includes information that some students may need descriptions for any non-text material and good signposting to navigate the study material. Wherever possible, DLOs have suggested that source material should be of a good quality preferably available in electronic format.

The DLOs added information about universal design of learning materials for the educational designers. It is a truism that a resource that is well-designed for students with disabilities is well-designed. The Centre for Universal Design describes universal design as 'the design of

products and environments to be usable by all people, to the greatest extent possible, without the need for adaptation or specialised design.' (*What is Universal Design?* 1997.)

4.3 Case management of students

The DLO's at CSU use a case management approach to identify student needs, their technology resources and preferred formats.

Students are using a variety of computer software and hardware, and their competency of use varies. The students may be recently blind and/or have only just acquired the technology. They often study part time and have other commitments that leave limited opportunity to learn new technologies and learning styles. They may have little opportunity to view new technologies or be trained to use them, or have limited access to technical assistance.

The DLOs discuss their individual needs and aim to provide the student with the material at the same time or earlier than other students but it is an interlocking process between package development, production, reformatting, and delivery to students. We see particular potential for improvement in the first three stages. We have approached the problem from both ends - developed the guidelines for the educational designers and endeavoured to produce text format study materials at the University.

4.4 Large print

Subject material in large print has been available directly from the printery since 2000 when technology improvements changed the way the production and printery communicated with each other. The production centre now sends the pdf document directly to the printery in an electronic pdf format which is easily printed onto A3 paper or any colour needed by the students.

4.5 Researching technology options

A working party was established by Students Services to determine the possible technology options involved in producing the desired text formats. The preference was to make use of the current method of production and develop inclusive practices that could be added to as necessary in the future. Cross-divisional support from Information Technology, Production Centre and Student Services has made gradual progress to the three viable options we currently have for electronic format.

4.5.1. Use of tiff files

The production centre scans all subject package material and saves them as tiff files. Each page of written material is a separate tiff file and the files are very large. This session we have trialed the process where the production centre saves this material in a network file and gives access to relevant staff who load the electronic files directly into an optical character recognition software (OCR) program. This process only takes a few minutes and replaces the laborious manual scanning process. The staff then edits the subject material to the individual student needs. The quality of the resource used for scanning impacts on the amount of editing required.

4.5.2. Ghostgum software

Ghostgum is an Australian company who has recently produced a version of GSview. This is a graphical interface for Ghostcript, an interpreter for PostScript language and portable document format. The software can convert graphic pdf documents of the readings to tiff

files. This file can then be loaded directly into the OCR software and edited to student requirements. This process can be used if the electronic file we have access to is in the graphic pdf format.

4.5.3. Adobe capture v3 and acrobat v5 software

Demonstration versions of these Adobe products were trialed by the working party. Used together they were determined to be a viable alternative if students had some sight and wanted to view the exact version of figures, graphs and tables with explanations. They were considered flexible in operation, giving different options depending on student needs.

5. FUTURE DIRECTIONS

5.1 New technologies

Software developments and updates will continue to influence CSUs ability to improve production techniques and the process of developing accessible study materials. The production centre will be managed by the Division of Information Technology from 1 July 2002 and this should have a favourable influence on the University's ability to keep abreast of new technologies.

5.2 Collaboration between divisions

The DLOs hope to continue working collaboratively with other divisions and the academic staff to promote inclusive practices. The Working Party on Accessible Study Materials was the initial cross-divisional group to address issues of accessible subject materials. Divisions of CSU other than Students Services are gradually recognising the University's ability and responsibility to provide information access without having to completely reproduce written material in an alternative format.

5.3 HREOC forum on accessible material

The HREOC convened a National Forum on Accessible Tertiary Materials held in May 2002 and recommendations were made to address the problems experienced by students in the tertiary sector. Collaboration with all key stakeholders identified many issues and hopefully some real gains will be made in a national approach.

The five discussion groups were:

Approaches to Production

Copyright and Publishing

Digital Libraries and Sharing of Material in Accessible Formats

Sector and Cross-Sector Standards and Guidelines

University Policies, Practices and Procedures

The recommendations from the forum are available in full at http://www.hreoc.gov.au/disability_rights/education/forum02/forum_recs.htm

6. CONCLUSION

Charles Sturt University is in a period of structural change and strategic planning. The recently adopted Disability Action Plan has policy and objectives that will assist all divisions in setting directions for assisting students with a disability. Staff are developing an understanding of the problems faced by students. Educational Designers have a resource to improve their knowledge of the impact of disability and how the concept of universal design might apply to assist students with print disabilities. Perhaps most significantly, budgets requests for 2003 have included funding for staff in the production centre to produce text formatted readings for students with a print disability to compliment the subject outline, study guide and other lecturer-produced material already available. Large print is already available in an efficient manner. Changes in technology will continued to be monitored to improve our production of accessible text format study materials.

7. REFERENCES

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