Report on Speech Recognition Software

The student undertaking the ECDL Core programme suffers from severe RSI and has restricted use of their hands.

The software used was Microsoft Office 2000 Professional, operating system Windows XP Professional and Internet browser IE6.

Speech recognition software used – Dragon Naturally Speaking v7

ECDL Manual testing system, Versions MTQB/4/3.0/Q and MTQB/4.5/V1.0.

Time extension granted under access to assessment, 35 minutes (this request was based on a mock test that the student had attempted).

Modules undertaken in the following sequence: 3, 6, 7, 5, 2, 1 and 4.

Overview

Having completed the seven modules, students who may be considering using speech recognition software to undertake the ECDL Qualification should consider the following issues.

**Voice** – Training of the software is very important, and can take a long time to achieve. It needs to be done before every session and more importantly before every test. Through experience it has become evident that training before the test is not always going to produce a good result. If the candidate is comfortable with the question and task being asked to complete, no problem but if the task is slightly difficult or the question is not fully understood then stress creeps in and actually changes the voice slightly. Then the speech recognition software does not understand the commands or other instructions. This in turn puts the candidate under further duress. If this does happen the only option is to end the test.

**Background noise** – generally the software can cope with low levels of background noise, but if the noise levels rise too much then the student will struggle to get the software to respond to given commands/instructions, as it picks up words from the background noise.

**Long winded** – students using this kind of software can experience frustration, as a lot of the commands can only be achieved by using the menu commands and not shortcut commands, making a simple task long and
complicated. Even when using menu commands, these could only be achieved by using the “Mouse Grid Window” (MGW) command. Accuracy in the use of this tool was very important, because if you missed the command word/spot, then you have to start from the beginning again.

**Consistency** – certain commands worked better in some applications than others. For example changing colours in the word processing software was more difficult than in the spreadsheets software. This problem was quite frustrating on occasions, especially during tests.

Overall the experience has been very valuable as it has highlighted difficulties that may be encountered when using speech recognition software in the workplace. Also it has proven that people who rely on this kind of support can achieve not only a qualification but can also find suitable employment with the right kind of employer. Currently the most difficult problem for people looking for work in the field of administration and financial sector is getting through the ability tests that employment agencies use. These agencies are more interested in people achieving words per minute than those people who have the knowledge and experience but are reliant on speech recognition software to enable them to carry out a high percentage of their duties for an employer.

We would say that speech recognition software is not a barrier to achievement but a tool that should be used to enable people to reach their potential; not just for those who because of disability require this kind of support but also able bodied people can use the software to make some of their tasks easier.

There were occasions when the candidate did feel like giving up, as it seemed that there was no light at the end of the tunnel. The time taken was 14 months, which seem a long time, but considering some of the problems encountered on the way and natural breaks the candidate has done well. Hopefully the information gained from this and other trials will make the process a lot easier in the future for other candidates.

In the future, training materials may need to be adapted to take into consideration people using this kind of software and also exam-setting bodies need to consider this issue as well.

The candidate is now thinking about undertaking the advanced modules in the future.

**Modules 1 - Concepts**

The student took approximately one month to read through this module. Initial Centre marking indicated a good pass but unfortunately the student had to use their hands with it being a paper based test. It took them about 15 minutes to complete, so it did not cause them major pain.
Modules 2 – File Management
Generally there were not too many problems with this module. The main problems encountered were;

**Naming new folder** –
This was problematic, could not use spell option as it would not accept some naming conventions as it did not recognise the words. Using the international phonetic alphabet, sometimes this would be accepted, other times it would not.

**Changing file names** –
The same problems as above. Got around this by opening the file and resaving with new name and or extension.

**Selecting multiple files** –
Could not be achieved.

**Searching for files** –
Was difficult using the search command.

**Creating desktop short cut** –
MGW disabled the short cut options and this made it difficult to create the short cut.

**Start menu** –
Found it very difficult and a long process to add items to the start menu.

**Copying text** –
Found it impossible to select two sentences from the help menu and had to copy the whole page.

Module 3 - Word Processing
General observation and report from the student have indicated that overall the training was successful but there are areas that did cause problems.

At the beginning, quite some time was required for the student to train the software to recognise their voice.

Some short cuts were not recognised by Dragon, these were; applying *Heading Styles*, altering *Font Sizes*, changing *Font Colours* and applying colours to *Borders and Shading*. To get these operations to work, they were accessed through a combination of Menu commands and the use of MGW, sometimes this was quite difficult and time consuming.

Opening files from the supplied files is difficult because of the spelling of file names, Dragon did not recognise them and they had to be spelt out so the software could recognise them, also they had to use MGW to navigate to the appropriate folder level to access the relevant files.
To manipulate graphics the student had to use MGW to select the appropriate graphic and again when working in the graphic format menu.

The first test (3.3) undertaking by the student was unsuccessful. Initially it was thought that the speech recognition software had to be retrained, as the centre had imported the student’s voice files on to the testing machine. The student ran out of time and only completed half of the questions. It was noticed that for the first 15 minutes of the test, Dragon was not recognising a lot of the commands given by the student. This is why it was assumed that the software had to be retrained.

Second test (3.1) undertaken by the student again was unsuccessful, again the student ran out of time. Prior to the test, time was taken by the student to train the speech recognition software. Again Dragon was not recognising some of the commands given by the student. Also some of the tasks in the test caused considerable problems, especially formatting tasks. This increased the amount of stress the student was under. This time it was thought that the problem with the software was it was picking up background noises, the student was also suffering with a chest infection and this was also thought to be contributing to the problem as well.

The third test (3.2) was successful, although the student nearly ran out of time. The student missed certain questions out knowing that they were going to cause them problems, the intention was that the student was going to go back to those questions if time allowed and attempt those questions. The pass mark gained was twenty-four and a half. It was identified that the problem with the software was stress induced, the student’s voice was being altered slightly by the stress of the test.

The main experience gained through the first module is the effect that stress has on a student while undertaking a test, this needs to be taken into account if other centres have students requiring to use speech recognition software. To prove this, the student undertook some of the tasks without the test environment, and successfully completed them.

Module 4 - Spreadsheets
This module was the one that caused the most problems. The candidate not only tried this using version 7, but also versions 8 and 9 of Dragon Naturally Speaking with the same results.

The greatest difficulty was the selection of a range of cells. The candidate was unable to achieve this task in any of the versions. This then led to the other problems;

Filling cells –
Dragon can be told to fill either “down”, “left” or “right” a certain number of cells, this did not always work, it was very dependant on the commands. Copying and pasting cells also caused some problems, using short cut commands, so had to use menu commands most of the time.
Switching between files/worksheets –
Switching between files did not pose too many problems, but between worksheets Dragon was confused so had to use MGW commands.

Entering formulas –
Had to use the spell facilities of Dragon to build function and formulas. Candidate had to record the cell references required before building the required function/formula, as the spell box of the voice recognition software obscured part of the worksheet (students have to be organised prior to test and have paper and pen available so they can write down information they require).

Data sorting –
Problems were encountered when only part of the data required sorting, as this required the selection of a range of cells. In the test workbooks there is no separation between the data and totals.

Copying parts of worksheets –
This proved very difficult to do. The candidate normally copied the whole worksheet and then deleted the information not required, occasionally just copying a whole column was sufficient and deleting un-required information. This only worked if the target worksheet did not have any existing formatting or formulas/functions embedded in the sheet.

Amending and replicating formulas –
Was unable to use standard ways of replicating formulas and had to use copy paste commands to achieve this. Could not use the fill command to replicate as this required the candidate to correct every formula/function on an individual basis.

Charts –
Could not move embedded chart around the worksheet. Also found it very difficult to select segments of chart to change formatting.

The training for this module was designed more about passing the module, as the candidate was struggling to complete the workbooks and losing motivation very quickly. Fortunately the candidate’s original employment was from a financial background and already had used and understood spreadsheets.

Module 5 – Database
Some problems were experienced during the module, these being;

1st Test  Student run out of time, difficulties experienced with the tasks, this in turn placed stress on the student and altered their voice and Dragon’s ability to understand instructions being given.
2nd Test
This was completed within the time allowed. It was only achieved by the student missing out questions which were difficult to complete. The student did experience stress once again towards the end, as time was running out and they still had four questions left with 6 minutes remaining. The student then only concentrated on the higher value questions.

Training
Experienced problems initially in selecting the options menu. This could only be achieved through using MGW.

Tables
Design – Adding field names did not present any problems. Problems arose when trying to select the data type, as these are drop down options and the student had difficulties in selecting the right types. Once the student had remembered how this appeared in the list they were able to dictate the data type. The next problem was being able to navigate between Field Properties and Table Design. It could only be achieved by using MGW.

View – Did not experience any major problems in navigating or entering data in this view.

Queries
Design – Found it very difficult to use the Wizard because of the drop down menu when selecting the appropriate table/query and then selecting the right fields to add to the query. MGW had to be used all the time when creating a query. This in itself was time consuming and tiring for the student.

View – When using the table for adding criterion it was not too bad, but had to spell out all the entries that were required.

Forms
Design – Creating the Form using the Wizard was difficult, experienced the same problems as the queries Wizard. Working in forms already created presented quite a few problems. It was difficult for the student to access the Form Header and Footers if they did not have any data in them. The only way was using the MGW and to use the form properties to create a space. Also experienced great difficulty in inserting label boxes. Was unable to select multiple boxes, so any formatting changes had to be applied individually. Found it nearly impossible to add fields to the details part of the form. During training the majority of the manual was skipped as it was stressing out the student too much.

View – Navigating individual records in Form View presented no problems, but navigating using the record selector button could only be achieved by using MGW.
Reports
Design – The problems experienced in the Forms were the same when designing reports. Working with Reports already created, experienced also the same problems. Trying to move items from one section of the Report to another proved to be very difficult and very time consuming.

View – No problems.

Macros – This was not attempted.

General Comments
This was a very difficult module to undertake using speech recognition software, but with a lot of perseverance by the student it was achieved.

The experience has highlighted the shortfalls of this software, particularly when dealing with a more complex piece of software and also its limitations for use in the workplace.

Module 6 - Presentations
Student found this module fairly easy to do. The only major issue was the software would not identify prepared text that was already in the presentation. If the text was entered by the student, then it was identified but once the presentation was saved Dragon would not then recognise that text again.

Slight problems were experienced when working with charts. This was mainly when working in the spreadsheet element as selecting a group of cells is problematic and it meant that the student had to change cells individually.

Clipboard –
Accessing the clipboard cannot be achieved if using mouse grid window.

Font colours –
This difficulty which was experienced when work with Word has now been overcome by using the menu commands instead of the toolbar commands, cannot select any of the default colours but can do it through more colours option. It takes slightly longer but can be achieved.

This module did not produce as many problems as experienced when undertaking module 3.

Module 7 – Internet
Student completed this module successfully using IE6. Some problems were experienced during the module, these being;

Web Pages –
Could not select individual sentences or paragraphs from a web page without having to select the whole web page and then deleting the unwanted text. Pictures were not a problem.
Tool bars –
Were difficult to use when using MGW. Ended up using menu bar for most commands.

Student found the module overall quite easy. The experience of having completed word processing and presentations already highlighted problems and the student was able to take those lessons learnt and use them in this module.

The views and comments expressed in this document are those of the student and the BCS approved centre.

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