Diagrammatic documentation for ribbon computing in Microsoft Office

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Abstract

In 2007 Microsoft changed the graphical user interface of MS Office, and moved away from the long-established drop down menu approach to a ribbon graphical user interface. There have been mixed reactions to Microsoft's ribbon interface. Ericson (2006) mentioned that even the experienced user might have difficulty adopting the interface, and Dostal (2010) concluded that the biggest issue with the Ribbon User Interface is to get accustomed to a redesigned user interface.

Reaction to this change was negative among our new and current students. For years the students had tried to memorise how to apply the right commands in Microsoft Office applications by selecting the correct items from the dropdown menus of the WIMP (windows, icons, menus, pointer) interface, and now that they were confronted with the new interface their confusion had begun to slow their progress down. The major effect in transition from the traditional WIMP interface to the Ribbon interface had created a difficulty for most students who had their original training with the older versions of MS Office software, as they were not able to locate the commands that they had learnt with the earlier versions of the MS Office in the new Ribbon interfaced version. The shrinking nature of the ribbon that would hide some commands on the ribbon when the resolution of the screen changes was also confusing for those students as they could not quickly locate the command they were looking for because the Ribbon had compacted them to save space.

For both new students and also more experienced ones, the approach to learning the Ribbon Interface seemed to be difficult due to the fact that they had to memorise the hierarchy of tab names, group names and then the commands. This led us to enhance our current teaching methods to try to deal with this change.

Keywords

Classroom documentation, learning difficulties, technology, computer education, ribbon computing

1. Introduction

Our approach to teaching our computer students was based on breaking down and
detailing all the necessary steps to achieve particular outcomes in the simplest way possible, thereby showing empathy towards the students' preferences as adult learners.

The students seemed to prefer having a manual with detailed written instructions for their further referencing in the course, and also tended to scribble (seemingly taking notes!) on their manuals while the class was in progress. For some students this behaviour had the disadvantage of losing their focus on the instructor while they had their hands busy scribbling, missing the teacher's instructions in the class and therefore relying heavily on their handbook for study.

For most students it would have been a time-consuming process to document the instructions given by the tutor in the detail that they prefer to have, and if they did not have any knowledge of shorthand or were not fast writers, they would have to ask the instructor to repeat the instructions for them to write it down, and this would have taken a significant amount of the class time. In some unfortunate cases this disorganised and slow student participation in class would have resulted in the student's discouragement and quick failure.

It would have been unjust to ask the students not to take notes, even though the instructions were available to them in their manual. Not taking any notes and following what was written for them would have taken away the flexibility in the way they approach learning, by obstructing their fondness for exploring the software applications against their own findings and fulfilling their sense of achievement by applying what they had learnt when they used their own documentation.

It also would have been almost impossible for us as trainers to document everything based on each student's requirements and expectations in the support materials given to them in the classroom. Therefore we decided to undertake a research project that involved creating and trialling a method of documentation which was flexible and easy to use for most students and to create a beneficial pedagogical system of documentation for Microsoft Office application tools. We had two research questions:

What might be a suitable method to help students cope with the changes made to the Microsoft Office Graphical User Interface?

How do students respond to the application of the identified method?

2. Methodology

Searching for a suitable method to cope with the changes in the MS Office Graphical User Interface made us to look back on our observation and past experiences in the classroom; we began experimenting with the use of flow charts in our computer courses. We found that incorporating spatial note-taking formats can guide majority of the students in taking high-quality notes (Rahmani & Sadeghi, 2011), and also creating a "cheat sheet" similar to what a software programmer might use for documenting work (Joyce, 1997) can give the students a visual road map that is less dependent on writing.

We had previously recommended students who were using traditional dropdown interface in their application tool to document their learning by taking notes in form of flow charts in sequential steps. For example, for opening Microsoft Word in the Microsoft Windows operating system the students were encouraged to write the instructions as follows,

To open Ms Word

1- Start button ----> 2- programs ----> 3- Microsoft office folder ----> 4- Microsoft word

Similarly we recommended using the following for finding and activating a command in an application tool,

To print a document in Microsoft Word,
It took about fifteen minutes of the class time at the very first session to introduce this method of documentation to the students and show them simple examples to use as templates.

This seemed to be a good approach in documentation, which gave the student the opportunity to document his/her learning very quickly, and also provided the student with a simple road map to quickly recall how to activate an application or command. This method was inexpensive, pictorial and significantly reduced the student’s need to write long sentences to document each step of the way. It also gave the students something productive to scribble about during the session, and even encouraged the students to draw their own graphics which resembled the Icons each command might have for each step of the way.

This method of documentation had its advantages, however we usually encountered frequent questions from the students (especially the new ones) about the computer mouse events and the computer keyboard shortcuts on how to activate a command; for example they were frequently asking if they have to press the right hand button or the left hand button on the computer mouse, or is it the Ctrl key or the Shift Key to hold down to perform a shortcut action. These were the questions asked more frequently and repetitively by the older students and the students with learning difficulties, especially if they had omitted to write down the mouse events or the keyboard shortcut keys while they were drawing the flow chart, and no matter how many times we had mentioned that the right hand side click of the mouse is only for activating menus they asked the same question again to make sure they are following the instructions correctly.

Another frequent and interesting question about the use of computer mouse was, why double clicking the left button on the mouse produces the same effect as clicking the left hand side button when opening an application tool?

This line of questions led us to recommend an improvement for the flow chart documentation approach by adding the mouse action with the process in the flow chart. We now included the mouse event in the flow chart as a reminder.

To open Ms Word

<table>
<thead>
<tr>
<th>Step</th>
<th>Action</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Start Button</td>
<td>----&gt; Left Click</td>
</tr>
<tr>
<td></td>
<td></td>
</tr>
<tr>
<td>2. Programs</td>
<td>----&gt; Left Click</td>
</tr>
<tr>
<td></td>
<td></td>
</tr>
<tr>
<td>3. Microsoft Office folder</td>
<td>----&gt; Left click</td>
</tr>
<tr>
<td></td>
<td></td>
</tr>
<tr>
<td>4. Microsoft Word</td>
<td>----&gt; Left click</td>
</tr>
</tbody>
</table>
This improvement did not help the students with their questions about the computer keyboard shortcut keys; however it had a good impact on their learning of the mouse events for each command and majority of the students adopted this method in their further studies.

With release of Microsoft Office 2007 Microsoft provided plenty of support for learning the new ribbon interface on its website and also provided a graphical tool called a converter which would have allowed the users to convert the old commands they already knew from the older versions of Office to the new interface by clicking on the command in the old interface and having the program automatically show them where the new command is located in the 2007 version.

The students who had some experience with Microsoft Office tools could use the new interface easily as long as basic training was provided to them about how the new interface works, therefore we incorporated a brief introduction to Ribbon computing to familiarise the students with the new interface at the beginning of each course as well. This introduction was very useful in making the students more familiar with the correct terminology used in Microsoft Office interface, as we used this terminology in the documentation tool that we created later on.

In the new ribbon interface the right hand side mouse button was more frequently used than in the older interface. For example if the student wanted to add or remove a frequently used command from the quick access toolbar the quickest way was to right click on that command and use add or remove from the quick access toolbar from the menu, or to minimise or maximise the Ribbon.

Also adding the Alt key for activating keyboard shortcuts in Ms Office 2007 and 2010 was not quickly picked up by the students as they were more used to the old shortcut commands by using the traditional Ctrl combination keys.

We encouraged our students to continue using the flow chart technique in their documentations, for example if the student wanted to map how to find the Line and Paragraph Spacing command in Microsoft Word ribbon, they were encouraged to write similar to the following.

```
Step                      Action
1. Home Tab   ---->    Left Click
   
2. Paragraph Group ---> Identify
   
3. Line and Paragraph Spacing ----> Left Click
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This method of documentation proved useful to keep the students engaged with the topic of discussion in the classroom and let them to make understandable notes, which they could refer to later.

At this stage we questioned some students about the usefulness of this method of documentation and their comments were encouraging, they liked the top down approach and the ability to minimise the amount of writing which this method of
documentation provided for them.

Older students and some students with disability or literacy problems however, had shown slower pace in documenting their work and therefore required some reinforcement to keep up with the flow.

At this stage, we needed to make sure that the diagrammatic documentation helped the students to focus on the key actions that are required in order to achieve the final result. The aim was to help them to avoid confusion when they are using the documentation in the future and to use their cognitive ability to create a clear mind map from the documented materials, as well as to ensure that the students are putting their kinetic and visual learning abilities to better use.

To make documentation easier, especially for older students and the students with disability, we created a cheat sheet to document the steps taken to access a command in MS Office's Ribbon and to activate the command in each step. This cheat sheet was designed to enable the students to document every command in detail on one sheet of paper, and to get them as close as possible to the required outcome.

In this cheat sheet the student was only required to write down the name of the command and circle the mouse event which would have activated the command, or anything else which needed to be typed via computer keyboard, L for left click, R for right click, DC for Double click and Type for showing the student that something needs to be entered by using the computer keyboard.

For example, if the student wanted to document how to find the Select all command in Microsoft Word's ribbon, the student first would have to write the name of the command in the Command name section of the cheat sheet, and then would have written the Tab name which she/he should point the mouse pointer to in the Tab section of the sheet, along with circling the mouse event (L for left mouse button click), the student then would have written the Group name that he/she needed to identify on the ribbon in the Group section (i.e. Editing Group in this example) of the sheet, from this point forward the student would document the actions required to find the Select All command on the ribbon in sequential steps, for example

- Step 1 Left click the mouse button on the Select Command
- Step 2 Left click the mouse button on the Select All Command in the dropdown menu

The students were also encouraged to draw the shape of the button that is required to be clicked by the left hand side mouse button inside step boxes to show them a visual support in finding the appropriate commands.
Students then would have written short passages in the Notes section of the cheat sheet about the purpose of the commands that they will use, along with any extra comments or tips that they might have picked up on the way.

3. Student Responses

Using the cheat sheet proved popular with our students, especially among the students with disability and Senior Citizens. For younger students the cheat sheet was a short term support tool to kick start their learning with the ribbon oriented interface of Microsoft Office.

On their appraisal forms all the students who used the cheat sheet rated the support material tools as good (2) or excellent (1) on a scale of 1 to 6.

Some student wrote extra comments about the tools in their appraisal forms. For example one student described the cheat sheet as "a very useful tool for referencing" and another student described the cheat sheet as "nice and easy". This feedback from the students along with their degree of success in completing their computing modules indicated that the cheat sheet is effectively enhancing their learning.

4. Conclusion

From the two preceding sections (Methodology and Student Responses) we can conclude that the short answers to our two research questions are "the cheat sheet is a suitable method to help students cope with the changes made to the Microsoft Office Graphical User Interface" and "students respond positively to is application". However, further refinement is possible. Although the use of the cheat sheet has significantly improved the students' progress in learning the graphical user interface of Microsoft Office tools and ribbon computing in general, it has its limitations by putting the emphasis on using the computer mouse only, and not supporting the documentation for using the computer keyboard shortcuts for ribbon computing. This limits the extent of student learning by restricting them to focusing on the computer mouse only. Also as we always have a variety of students' comments and questions about the cheat sheet inspiring us to further enhance its design, this method of documentation is always changing to suit the students' needs. The next step in enhancing this evolutionary tool is to incorporate the documentation for the shortcut key methods in ribbon computing in the cheat sheet.
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References


