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STRAW - STRUCTURED READING, ANALYSIS AND WRITING IN HUMANITIES DISCIPLINES

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Abstract

Technology provides a range of tools which facilitate parts of the process of reading, analysis and writing in humanities, but these tools are limited and poorly integrated. Methods of providing students with the skills to make good use of a range of tools to create an integrated, structured process of writing in the disciplines are examined, compared and critiqued. tools for mindmapping and outlining are examined both as reading tools and as tools to structure knowledge and explore ontology creation. Interoperability between these and common wordprocessors is examined in order to explore how students may be taught to developed a structured research and writing process using currently available tools. Requirements for future writing tools are suggested.

Keywords

mindmapping, reading, writing,

The reading and writing skills which students need to master in their professional, disciplinary formation in third level education are profoundly different to those taught at second level. It is clear that technology has, in recent years, profoundly transformed the environment in which our students learn to communicate in their disciplines. However, it is not clear that we are have as yet full assimilated the opportunity the new digital age presents to streamline and improve the writing process for student in the humanities and social sciences. This paper offers practice based reflections on that process, and how it might be improved both by using existing tools and also reflects on what we need from the next generation of digital writing tools for ourselves and our students to streamline the process or reading, analysis and writing. How technology can be used to create a structured process which enhances student writing is looked at in three areas – mindmapping for active reading of scholarly materials, mindmaps and or outliners for essay planning, and proper use of templates and stylesheets to structure documents.

READING

At second level, students depend on textbooks in which information is organised and presented in an easily accessible way. Textbooks in secondary education are written to meet national curriculum standards, and therefore cover a defined body of knowledge which is assessed by standardised national or international examinations. Textbook writing is a specialised task which requires careful attention to the reading level of the student. We expect that students entering university will all have achieved a level of reading skill which will allow them to 'read' for the degree[1]. We would like to imagine that reading for a degree in university was always qualitatively different to the experience of students in secondary education, but in fact, until recently, the difference was not as significant as we would have wished. Students in third level education who have to cover a range of modules do not purchase a wide range of books for each course, and tend to pick books with offer good general coverage, in fact, classic textbooks. We are all aware that university libraries do not have plentiful multiple copy holdings of a range of monographs to allow their easy use by large undergraduate classes. Holdings of physical copies of journals are equally restricted.

It is only in the last decade, with online access to many journals and the growing move to open publishing in peer-reviewed repositories that university undergraduates have easy access to a wide range of scholarly writing on the majority of topics and issues which they meet in their courses. Ten years ago, if you were setting an essay for a class of 200 students, it was almost impossible to expect them to use important journal articles when there was only a single paper copy of the journal in the library. It is now possible to set those written assignments with reading lists which include scholarly journal articles for large classes of 100 or 200 students, secure in the knowledge that all those students can access the required readings simultaneously, online.

Some providers of online journal access are coy about their usage figures, but local figures for University College Cork, a university of some 16,000 students, show search and download figures of 1.39 million in 2006 and 1.58 million in 2007 for the most used 29 online repositories only. That represents about 100 a year per student, and, as indicated, does not count all online sources. The overall average increase in use over the 2006-7 period was 14%, with some collections showing increases of over 30%. In discipline specific terms, through JSTOR the American Historical Review was searched or downloaded from over 19,000 times; the comparable figure for the English Historical Review was over 18,000. Not all of these necessarily represent accesses by the 800 history students in UCC, but it is reasonable to assume they account for the majority of those accessions which would mean that the average history student accesses *each* of these two major journals *alone* over 20 times in the course of the year. From a start point of zero about 1995, use of online scholarly articles by humanities undergraduates has become ubiquitous[2].

Equally, the tools which our students use to write have changed utterly over the past decade, Ten years ago, many student papers were still handwritten. Now, all student essays are written on wordprocessors. However, while the technological tools the students use to write have changed, there is no evidence that the writing techniques they use have developed to take advantage of the possibilities offered by the new tools.

Equally, there is no evidence that they are making effective use of the cornucopia of research material available to them, or that they are integrating all the new tech toys into an effective writing process.

The first stage of any student paper writing process is the reading. While we can now legitimately expect students to use articles from scholarly journals as matter of course, those articles were not written with an undergraduate audience in mind. There is a significant jump in the type of reading skills required for students who progress from reading second level textbooks in May to working with scholarly journal articles in October. In the examinations that mark the end of secondary education, students are expected to produce 'short paragraphs' which often follow the classic 3 facts and a date formula, or essays which in practice amount to 5 of those paragraphs strung together with a minimal introduction and conclusion – the famous 5 paragraph essay which is so beloved of COMP101 writing classes taught to first year undergraduates in so many US universities (the term 5 paragraph essay produces over 400,000 hits in Google, and has its own wikipedia article, although many of these resources are geared towards very short versions of this form [3]).

There are significant debates about the merits and limitations of the '5 Paragraph' essay which lie outside the scope of this present paper; it is sufficient for our purposes to note its dominant place as a distinctive mode of written expression in student work in secondary and tertiary education[4][1]. While it is certainly not an appropriate end for student writing in university, it is a necessary foundation. Students who cannot write a 5 (or 7) paragraph essay, the common 1,500 word essay length in undergraduate survey courses, will not be able to progress to writing longer, more analytically challenging pieces. Equally, the 3 facts and a date paragraphs from which it is built is a basic format which actually works very well in many humanities and social sciences disciplines at every level of writing.

A critical problem for students reading in university is that they are moving from an environment where facts are important into one where interpretation, analysis and argument are important. I do not entirely agree with E.H. Carr's assertion that history is “a hard core of interpretation surrounded by a soft pulp of fact” but it has merit[5]. Confronted at second level with a paragraph of text students will adopt notetaking strategies which emphasise the facts, rather than the argument. Many academics will be familiar with finding both books and journals on library shelves in which students have carefully

underlined the three facts in every paragraph, and ignored the analysis which binds them together and gives them interpretative force. While we tell students as a matter of course that what matters in university is analysis and argument rather than merely piling up facts, it is clear that we need a learning methodology which encourages students to learn by applying this actively.

In early efforts in this direction, students were set an exercise in which they were required to read and article in a journal and present a bullet point break down of the content which clearly distinguished the writers argument or interpretation from the evidence used to support it

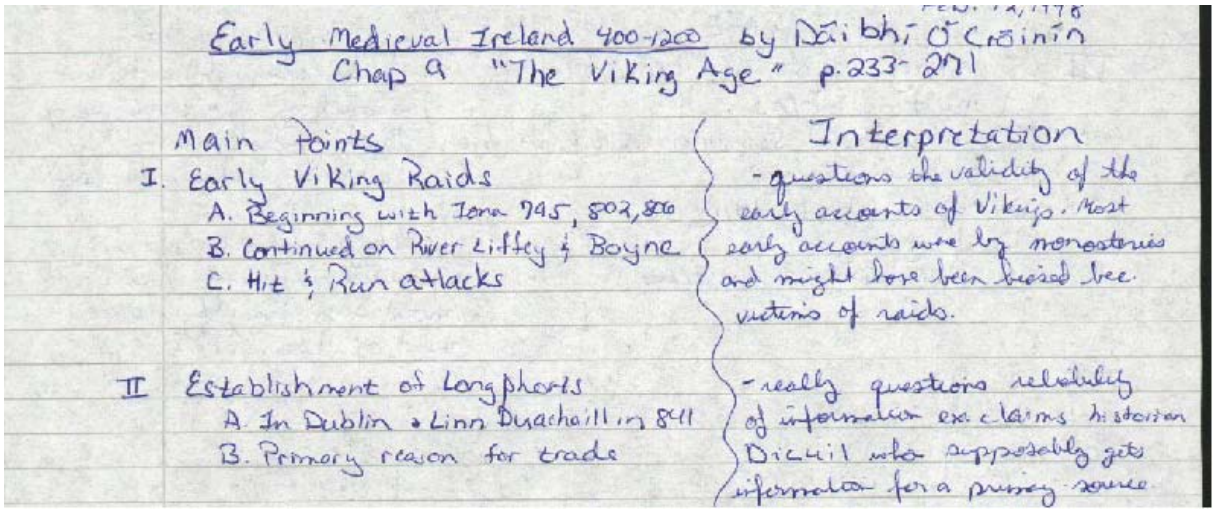

Figure 1 Separating evidence from interpretation

This is a perfectly adequate method to encourage students to distinguish argument from evidence, but it does suffer from the significant limitation in many modern wordprocessors – the lack of templates which properly support parallel columns, rather than snaking columns.
A similar effect can be achieved by using mindmapping as an approach to structuring reading. Mindmaping, and various close analogues like concept mapping, tree and leaf diagrams and other forms of graphical organisation is widely known and well documented [6]. This approach is supported by a number of software tools, of which some excellent examples are free, open source programs. Reducing a journal article or book chapter to a one page mind map allows students to identify the major sections of the work, the analytic idea in each paragraph, and, within limits, the items of evidence deployed to support the interpretation. Stipulating a one-page limit does tend to force this lowest level of the content off the page – for an article of chapter of 20-30 pages, there is usually enough argument to fill a one page mind map.

While mindmapping as a notetaking (and presentation) tool is now supported by a range of digital tools, it is of course a method well-suited to manual work. It is not luddite to suggest that students be enouraged to mindmap work manually as well as digitally, especially when working for exam revision – handdrawn mindmaps with a range of colour and sketched images serve to add a kinesthetic memory to the visual dimension of the form which can serve as an additional memory reinforcement for many students. Mindmapping as a tool is popular with the disability support services in many universities, as it a method of organising knowledge which works well for students with dyslexia and other learning disabilities.

In mindmapping, students therefore are asked to take scholarly articles or book chapters, to use the technique to identify the major sections of the article, using subheadings where present, and within sections and paragraphs to distinguish fact from analysis. This process can be seen in figure

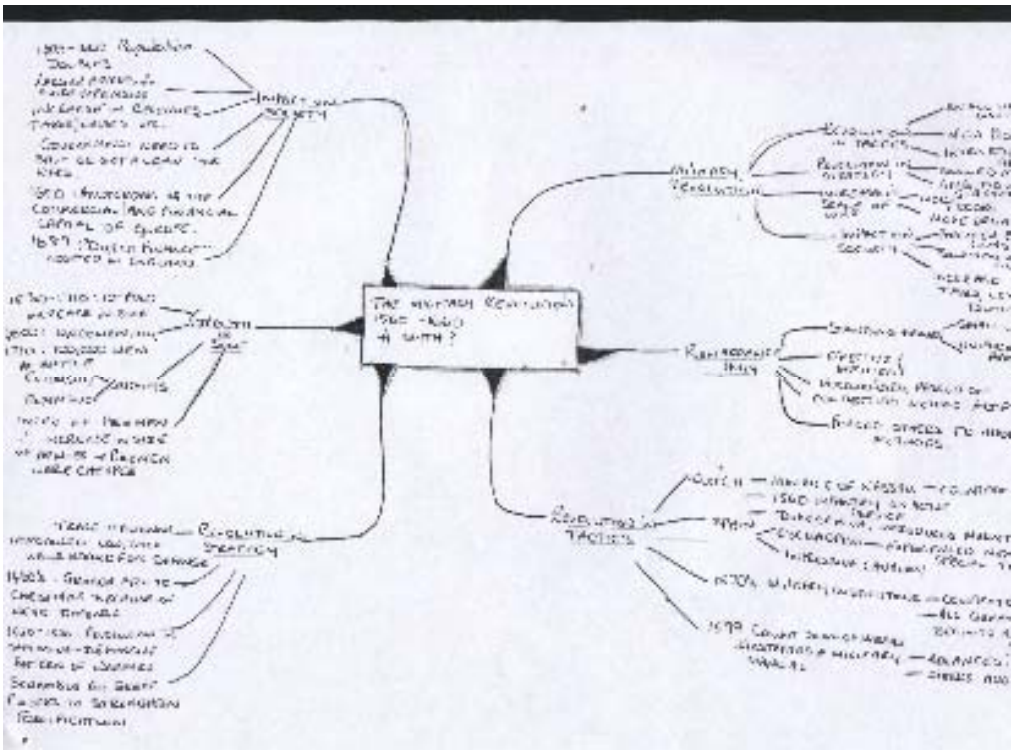

Figure 2 Student Mindmap of journal article

showing part of a journal article and a section of mindmap.

It is particularly important to encourage students to use computer mindmapping programs in reading for written work as this provides a building block towards the next step of an integrated writing workflow – planning the essay. In the humanities more than the social sciences, we expect student essays to reflect a process in which they read, reflect on the arguments they find in the reading, organise those arguments into a distinctive interpretation of their own, and present this in their essay. In the humanities, while the essay starts with a question, the plan for the final piece of writing is expected to emerge from the students' reflection on the evidence, with the essay providing some measure of the extent to which they have successfully asserted their intellectual ownership of the material. For History, as for many humanities disciplines, writing is essential because “Indeed, for the purposes of discussion, history does not exist until it has been reconstructed and written down by the historian.” [7]

ESSAY PLANNING

Essay planning by undergraduates is something of a movable feast. Rough counts of the response to the question “Have you ever prepared an essay plan” in one large class have varied in recent years from up over two-thirds to as low as one-third in one large class – and the graph moves down as well as up from year to year. Students who have been exposed to mindmapping as a reading tool quickly realise two further benefits.

The first is that mindmaps from a number of readings for an essay can readily be cut and pasted to re-organise the material into an essay plan. The second is that the material can just as easily be re-arranged to improve the initial plan or create several different plans for the same essay title. Requiring students as an exercise to produce three different essay plans for an essay title forces the students not only to plan an essay, but to consider how the same body of knowledge can be reorganised to produce different approaches to answering the same essay question. In history, almost every issue can be easily approached in two different ways – as a chronological narrative or as a thematic or descriptive account. This is also valid for many of the literary humanities. It may work less well in the

social sciences where many topics require a more scientific paper structure, although even in the social sciences, essays that are, in effect, a literature review, can certainly be 'sliced and diced' either chronologically to trace the development of a debate, or thematically to reflect the extent of the debate

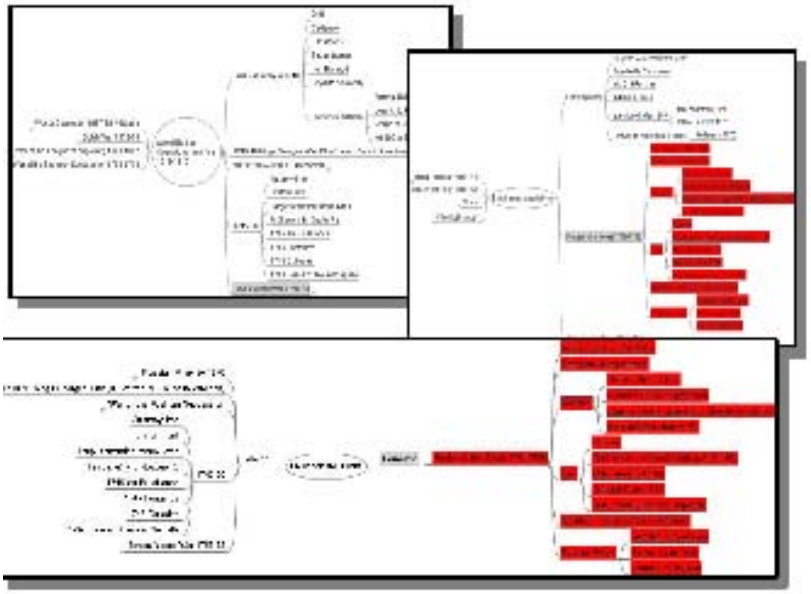

Figure 3 Combining Mindmaps for an essay plan

Having required students to produce a mindmap of an article or chapter in a scholarly work as a coursework task, it seemed logical to introduce a task in which students were required to produce essay plans. While we always enjoin our students to plan their essays, and we expect that student essays which are planned will be better and get a higher mark, this planning process is only implicit in the student writing process. In order to make it explicit, a new coursework task was introduced. In this, students were given a list of essay titles relevant to the course content. They were then asked to select one title from this list and submit three, different, one page essay plans for this title. Students were told that the plans could be handwritten, brainstormed or mindmapped by hand, or produced using mindmapping software, or produced as a bullet list or outline from a wordprocessor. Students are not required to use computers to produce the essay plans, but they are encouraged to do so and most do.

It has been the experience over a number of years of using the creation of an essay plan as an explicit assignments in its own right that producing a third, distinct, essay plan for a given essay title is difficult and challenging for students. In practice, in the marking of this exercise over time, many students produce two good, and clearly distinct essay plans but have difficultly creating a third plan. It has been common in grading this assignment over the the past 5 years for many students to get a good B grade. Quite a small number get an A grade, and this has always been as a result of having a decent third essay plan. The distribution of grades does follow the pattern for the end of year exam for the same class. (unlike the mindmapping exercise where students who do poorly in exams sometimes score exceptionally well in the mindmap exercise)

ESSAY WRITING

The process of getting from writing plan to written work is actually well-supported by most wordprocessors, although this is not well understood. Most people apply styles to text visually rather than structurally. All wordprocessors support style sheets, but most students do not know how to use them. In reading, we recognise that headings have meaning, and many students use headings to delimit sections in their essays. However, they do so by applying boldface, underlining or a larger font size, often haphazardly. This casual painting on of styles, while it works visually for the reader, is meaningless for the wordprocessor. It cannot process those words as headings.

All good modern wordprocessors do support the application of different heading levels as section and chapter heads (although some do not make it clear). Once a student has produced an essay plan, it is easy to demonstrate to them the benefits of outlining that structure properly using style sheet based headings. Headings applied in that way are recognisable by most wordprocessors which will at least use them to generate tables of contents automatically. Equally, if all the material in the essay is part of a proper, hierarchal, structured document based on style sheet based heading levels, it is then very easy to reorganise the paper. Wordprocessors will recognise all Level 2 headings as 'childern' of their parent Level I heading, and if you move the Level 1 heading, all the children of that heading will move with it, taking their attendant 'body text' with them. Major structural re-organisation of drafts then becomes simple, and orphaned paragraphs are no longer lost or left behind during wholesale editing by 'cutting and pasting'.

In most wordprocessors, this is presented as a means to enforce adherence to standardised style sheets. The control it offers over document outline and structure is not stressed, but for our purposes, this is the real power of this approach. Professional writers – technical writers, journalists and others – are usually familiar with the idea of formal document outlines, and there have been a number of wordprocessor and text editing programs over time which have offered strong outlining features as tools for planning and organising writing. The current generation of leading wordprocessors do not stress this, even where they effectively offer outlining functionality.

Awareness of how document templates and styles work in rare among most students. Many, especially those working on longer, final year projects, have almost all seen and commented positively on the value of using proper headings to organise their papers once the methodology has been demonstrated to them.

It is hardly surprising that it is possible to move relatively easily from an essay plan in a mind-mapping program to a structured essay outline in a wordprocessor, although the functionality is not as smooth as one would wish. Cutting and pasting from a mindmapping program like Freemind[ ] or Xmind[ ] in most wordprocessors will produce an outline which is indented to match the structure of the mind map. It does not automatically maintain or apply the appropiate heading levels. Commerical mindmapping programs like MindManager[] do offer very good intergration with Microsoft Office, easily moving mindmaps into Word or Powerpoint as outlines.

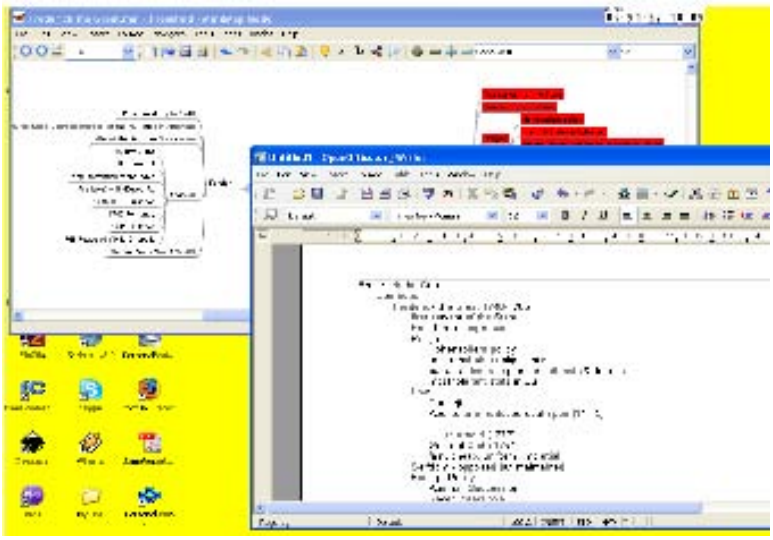

Figure 4 Mindmap pasted into wordprocessor as essay outline

Most students find this methodology for structuring research and writing quite obvious once it has been laid out for them. The process requires them to read actively, using mindmapping to distingush evidence from argument. They then use the same mindmapping programs to organise their reading, analysing it and grouping it into an effective essay plan or outline with transfers readily into the framework for a structured document in their wordprocessor.

Of the commercial products, MindManager is a clear leader in market share, and offers excellent functionality and strong integration with Microsoft Office, the most commonly used office suite.

On the Free, Open Source side, Freemind is generally regarded as the best of the available mindmapping tools, although there are a wide and growing range of competing tools. Many of these are online tools with limited functionality. A key issue with software with lists mindmapping as one of its possible uses is that many of these programs are primarily diagramming tools, often with a limited template of shapes which do not easily allow for the export of the content as a structured outline. They are only diagramming tools, and do not really support the sort of hierarchal parent-child data structures with easy remapping of content necessary for a real mindmapping program. In the past, students have submitted mindmaps drawn using a wide range of applications, including the drawing tools in Microsoft Word and Adobe Photoshop. While these clearly show that the student has organised linear text into a visual structure, the information is not in any way reusable.

The leading open-source wordprocessor is OpenOffice, with Abiword and various Linux wordprocessors like Kwrite following behind. From Freemind or Xmind, it is possible to cut and paste a mindmap into any of these. It will appear as a properly indented document outline but it will not have properly applied heading levels. Applying heading levels with the wordprocessor is a small step, but it would be better is it were unnecessary. Since all major OpenSource wordprocessors, like the better open source mindmapping programs, support a number of standards compliant, XML based formats, it should be possible to ease this transition with a simple XSLT plugin for either the mindmapping program or the wordprocessor. This functionality continues to improve in open source software.

While Microsoft Word does have a flexible outlining mode, this is little understood and rarely used by most people. IT does support 'folding' by hiding text and heading levels, and allows full drag and drop moving of headings, carrying child heading and associated text along with the moved headings. At this time, no other major commercial or open source wordprocessor offers comparable outlining functionality. OpenOffice Writer comes close, with its Navigator view. Since this is a pop-up window, it is not as well integrated as the MS Word Outline view. It is possible to restructure document outlines and complete documents by drag and drop or cut and paste within the Navigator, but it may not be as easy as in MS Word. Unlike MS Powerpoint, which also supports 'proper' outlining, OpenOffice Presenter works on the basis of 'slide as drawing' instead of the document centric PowerPoint.

RECOMMENDATIONS

It is desirable that we be able to teach our students how to write in an organised way. In order to do that effectively, we need to make explicit the tasks which are implicit in our essay based assignments and present these as part of the process which can be taught, learned and explicitly assessed. This is important to facilitate the implementation of a learning outcomes approach which is being imposed on humanities disciplines as part of the developments in the European Higher Education Area. It would greatly facilitate this teaching if it were supported by a proper set of reading, analysis and writing tools. To do this we do need a set of writing tools which effectively integrate the different stages of the process – reading, referencing, analysis and writing – into a structured process. Commercial tools which do this reasonably well are available, but at a cost; Open Source tools do not yet have the same degree of easy integration which would allow us to direct our students to use them with confidence, but are making progress. Since higher education institutions must be increasingly aware of costs, we should encourage and support the enhancement of open source technology tools which will better serve the needs of the humanities and social sciences.

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[2] This data was kindly provided by the Librarian at University College Cork, Mr John Fitzgerald

[3] See http://en.wikipedia.org/wiki/Five_paragraph_essay (2009-01-27). Google search based on http://www.google.ie/search?hl=en&client=firefox-a&rls=org.mozilla:en-US:official&hs=1d9&sa=X&oi=spell&resnum=1&ct=result&cd=1&q=5+paragraph+essay&spell=1 which returned 403,000 hits on 2009-01-28
[4] Foley, Marie Unteaching the Five-Paragraph Essay. *Teaching English in the Two-Year College*, v16 n4 p231-35 Dec 1989
[5] Carr, E.H *What is History* with an introduction by Richard J. Evans (London, Palgrave, 2001) p 18
[6] Tony Buzan is regarded as a leader in the field, see inter alia his Buzan, Tony. The Mind Map Book, (London, Penguin Books, 1996). Buzan's company has claimed a trademark on the term.
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[8] Freemind see http://freemind.sourceforge.net/wiki/index.php/Main_Page (2009-01-29)
[9] Xmind see http://www.xmind.net/ (2009-01-29)
[10] MindManger see http://www.mindjet.com/default.aspx (2009-01-29)