How to Write Small Stories and Big Novels and the Computer Tools Needed for Doing It

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ABSTRACT: This study describes the process of fiction writing based on literature and interviews with six Danish writers. It describes how fiction writers use freewriting, where they generate texts, plots and characters as they are written, and then later organize and revise the results. It describes the importance of capturing text as fast as it is created in the mind, and the relation between writing and psychological well being. Based on literature and the interviews, the study describes the characteristics of a good computer tool for fiction writing and eleven specific functions, which may facilitate fiction writing and also benefit writers of articles and non-fiction.

KEYWORDS: Creative writing, fiction writing, writing process, word processing

INTRODUCTION

Today most writers of fiction literature use a computer. This means that fiction writing is one of the types of art that is most penetrated by computers. Almost all writers use common word processing software, which is designed to write reports and office documents, even though it probably is not an optimal tool for fiction writing. Compared to non-fiction literature, the language in fiction literature is more varied, and the interaction between language and content is much more important, which makes the writing significantly more difficult.

There have been several attempts to make applications to support fiction writers and writers of creative non-fiction. Some examples are:

- The MacAuthor software, which was introduced to the MacIntosh in the eighties, made it easier to set up dialogues, theatre and movie scripts. At that time common layout facilities were much more primitive than today.
- According to advertisements, the FictionMaster software supports the creation of characters and a plot in fiction literature [15].
- Writer's assistant makes it possible to organize electronically stored notes, to build a structure for a document based on them and finally to write a text based on the structure and notes [12].

These applications have only had very little success, and it is uncertain to what extent they support fiction writing. There is a lack of studies about the specific tools that can help fiction writers during their writing process.

In order to make the design of better software for fiction writers possible, this study describes the methods used by fiction writer. Based on that it describes some functions that may assist them.

THE PROCESS OF FICTION WRITING

Fiction writing is a mental process where the result is captured as words on a physical medium.

Writing as design

Sharples regards writing as a design process [12], and bases his description on Boden's theories about creativity [1]. According to Sharples, writing consists of the design of a text that is meaningful within a number of different conceptual spaces, each with their own concepts and constraints [12].

Sharples uses as an example a story about a dinner in a restaurant [12]. In such a case there is one conceptual space with the normal constraints of a fiction story, for instance that each character shall be introduced when he or she first occurs in the story, that there shall be a conflict to make the story more interesting, and that it shall reach some sort of conclusion. Another conceptual space constrains the actions that may occur while having dinner in a restaurant, similar to what Schank and Abelson describe as a script [11]: our assumptions about the type and order of actions during a specific type of event. (In this case the event is a dinner in a restaurant.)

In addition to the conceptual spaces that are used for defining the plot, the use of language can be regarded as a design within a number of conceptual spaces. One space constrains what we perceive as meaningful sentences, whereas others constrain the meaning we can assign to specific words and the type of language we accept as authentic when used by specific persons in specific situations.

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One of the characteristics of outstanding fiction literature is that it gives the readers new experiences by exploring or moving the limits of conceptual spaces. In contrast, business texts and most non-fiction texts stay within the constraints of the involved conceptual spaces. Fiction literature also includes more conceptual spaces in the design process than most non-fiction literature. Most writers of non-fiction do not work with the sounds and rhythms of the language, and it is only in special cases that a non-fiction writer designs texts to be understood on several different levels.

Freewriting and conscious writing

Elbow describes the ideal writing process as follows:

> First write freely and uncritically so that you can generate as many words and ideas as possible ... then turn around and adopt a critical frame of mind and revise what you have written. [6]

According to Boice, the use of free and uncritical writing was described already in the middle of the nineteenth century. [2]. The method has later spread through a number of books [2], it is frequently taught in creative writing courses, and it is so simple that many writers probably have discovered it on their own.

Elbow uses the term freewriting [6] and Boice uses the term spontaneous writing [2]. Both describe how the writer for a short period of time, five to ten minutes, shall write continuously without reading or correcting what is written [2, 6]. Boice states that this type of writing gives better results because it is possible to write without feeling responsible for the result [2], and Elbow states that the method gives better results because the critical faculties of the writer do not disrupt the writing [6].

Boice describes how a number of writers has found similarities between freewriting and Betty Edward's well known method for "Drawing on the right side of the brain" [2], where the artist follows the lines in an object without any interpretation or attempts to verbalize what is seen [5]. However, the similarities are not real. Even when a writer uses freewriting to describe a scenery in a story, it is necessary for him to interpret and verbalize what is seen in order to describe it.

Freewriting is better understood as a design process where a number of automatic processes in parallel produce a text. This often gives a better result than if the writer thought serially and consciously over each aspect of the text at a time.

Both Elbow and Boice mention that a person doing freewriting feels that he or she has no control of the writing, and they stress that parts of the text often are more fluent and better than what can be created through conscious decisions [2, 6]. The phenomenon is similar to what happens when a dancing person lets go, so the automatic processes in the body control his or her steps [14].

Generative writing, as described by Boice [2], is a key concept in fiction writing. It is a type of freewriting, where the primary purpose is not to produce pieces of text, but *through the writing* to develop parts of the plot and the characters in it [2].

Freewriting requires that the writer can capture the words almost as fast as he or she can think them. That may be the reason that fiction writers, among them Mark Twain, were among the first to use typewriter [3]. The typewriter meant that the writer did not have to think about the readability of his handwriting, and with the invention of touch typing at the end of the nineteenth century it became possible to write significantly faster on a typewriter than by hand.

Elbow's [6] description of the revision of a text makes it clear that the revision process in reality is a conscious design of a text so it functions as well as possible within a number of conceptual spaces. Elbow describes in particular how the writer, as part of the revision process, shall change from "writer-consciousness" to "reader-consciousness" [6]. This "reader-consciousness" can be regarded as a conceptual space where the writer focuses on the immediate experience of the text without reflecting on the plot, the language or what he or she wants to express.

The writer's experience while writing

An important motivation for writing is the almost sensual pleasure it may give the writer. Susan Perry describes that writing frequently is accompanied by a flow-experience [10]:

> A pleasurable state of total involvement where the person is completely focused on the task with clear goals, immediate feedback and a good balance between skills and challenges [4].

Perry stresses that it is only possible for a fiction writer to stay in a state of flow if he or she is not distracted during the writing [10], for instance because the operation of the computer draws the attention.

Perception of the text while writing

The appearance of the words on the page is vital in poetry, but it is also an aspect in novels and short stories, in particular when evaluating the balance between dialogue and descriptions.

The fiction writer must take into account that reading occurs over a period of time and that the experience of the reader in each moment is colored by his or her experience of the preceding parts. The reader moves through a sort of tunnel when reading the text [7]. However, the writer is moving through a similar tunnel when creating the text, experiencing the point in the text at which he or she is writing or editing, remembering the preceding part and with only vague expectations of what will follow.

A fiction text is frequently so large that a computer screen can only show less than one percent at a time. (Novels are often on more than 200 pages, the computer screen shows normally less than one full page at a time). If the software does not provide a good overview of the work, the writer may spend a significant amount of time scrolling back and forth and comparing different parts of the text.

METHOD

During February and March 2004 I interviewed six writers, three male and three female, between thirty and sixty years old. They were randomly selected, and contacted through the member list of the Danish Writer's union (Dansk Forfatterforening). Each interview lasted between one and two and a half hours.

I interviewed each writer about the last writing project he or she had worked on, first through open questions then through more detailed questions about problems the writer had experienced and about each phase of the writing process: planning and preparations, the actual writing, and the revision process. During this part of the interview each writer could describe his or her actual writing process freely without being influenced by any discussions of specific word processing functions.

Based on my own experiences from creative writing courses and as an amateur (as yet unpublished) fiction writer, I had prepared a list of 14 functions (some of them in slightly different versions) that might be useful when writing fiction literature, and when necessary I had prepared sketches illustrating the functions. I presented each function at a time and asked about its usefulness. This led to a detailed discussion of the most useful design of the functions, to the description of more details in the writing process, and to the identification of four more potentially useful functions.

It takes time to write fiction, and it is essential that the writer is not disturbed. Therefore it was not feasible to get information about the writing process by observing writers or by interviewing them at intervals during their writing.

Before and during the interviews, I presented myself as a writer who also knew about the design of software tools. I experienced that the participating writers wanted to collaborate in the exploration of the writing process and in the design of new tools. They were motivated and contributed with detailed information.

RESULTS

The writing processes of all writers in the study are consistent with what is described by Elbow and Boice: first freewriting then a conscious editing process [2, 6]. All interviewed writers describe their freewriting in terms that are consistent with design done through a combination of automatic processes.

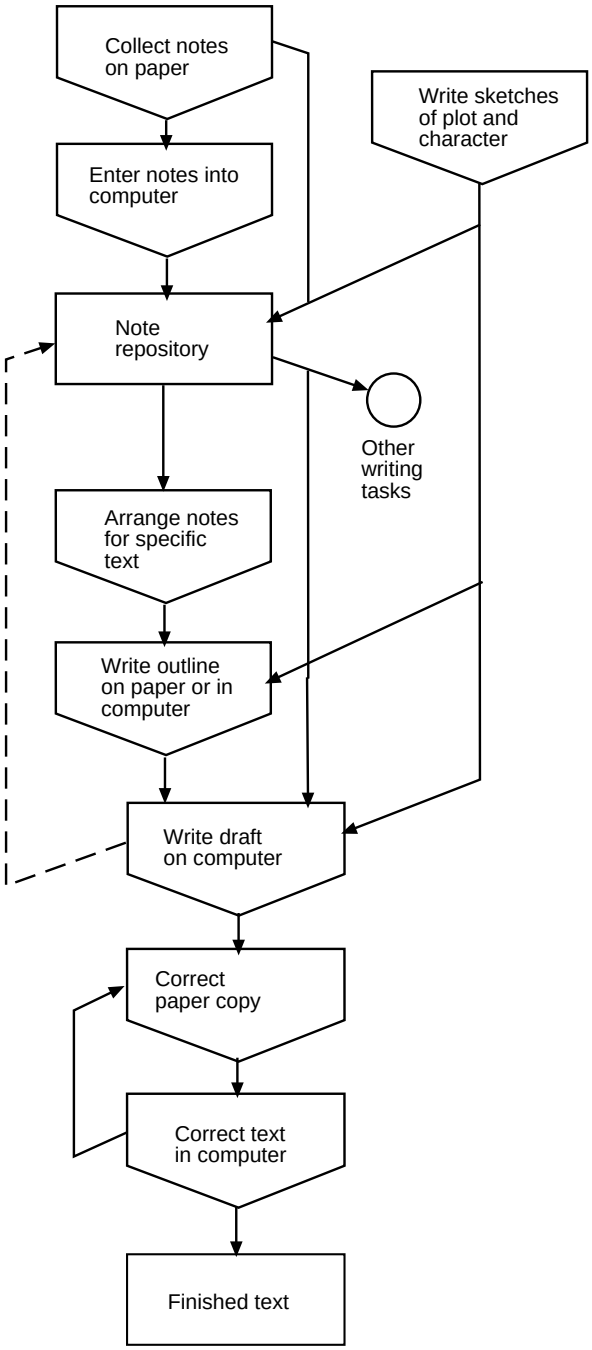

Figure 1: Workflow based on those of the interviewed fiction writers. The dotted line shows reuse of pieces from unsuccessful stories.

The interviews show that a writer may start a writing project by collecting notes, by using generative writing for creating sketches of plots and characters, or by using freewriting for creating an outline or a draft on the computer. See fig. 1.

At least four of the interviewed writers use some sort of generative writing. The writers tend to create plots and characters by writing about them, by writing them out, instead of by conscious planning. Whereas a non-fiction writer may compose a document by writing a text that connects the contents of a set of notes placed in a pre-arranged order; fiction writers tend not to use their notes as an outline, but more as an inspiration and as references when writing and revising the text. It appears that fiction writers consider the flow and structure of a fiction story as more important than the inclusion of any specific pieces of information, including any specific characteristics of the characters in it.

Conscious writing and revisions may be used when writing a draft, and it is used when correcting a written text. The participant's comments indicate that points to be corrected cannot be identified as part of an automatic process, whereas new wordings often are generated or entered as freewriting, through a combination of automatic processes with very little conscious control. Their descriptions of the conscious revision process support the hypothesis that writing can be regarded as a design process involving several conceptual spaces.

General design considerations

All writers in the study did other work in addition to fiction writing, and at least five of them felt it was a problem to find enough time to write, and anecdotal information confirms that fiction writers frequently must do other work to support themselves. This indicates that writers have a real need for tools that make it possible to work faster.

The interviewed writers were all skilled computer users: None of them mentioned basic problems when using the computer, and two of them discussed advantages of different word processing tools in details.

The interviews confirm, at least for some writers, the importance of an uninterrupted experience. One of the writers mentioned that it was very irritating when the computer disturbed the writing, and another mentioned the importance of the proper mental state when writing. This supports that, in particular during freewriting, it is unacceptable if the computer attracts the attention of the writer or disturbs a possible flow experience.

All interviewed writers express strongly that they need paper copies for making corrections. One of them expressed that she cannot sense the color and rhythm of the text on the screen, and another described that it is possible to find errors in a paper copy that cannot be seen on the screen.

Five of the interviewed writers described their work process almost solely as a series of physical actions: making notes on paper, writing an outline in the computer, making a paper copy and entering corrections in the computer. Even the modification of a character in a story in order to solve a specific problem in the plot was described as a concrete task. When designing tools for fiction writers it is important to remember that for a skilled writer the process consists of concrete tasks that are done on specific representations of pieces of text.

The computer as a tool for freewriting

When freewriting it is essential that the words can be captured as fast as they are created in the mind of the writer. The interviews indicate that such a fast capture of the words in general is possible with touch typing and current computers and keyboards,

The interviews indicate that the ability to enter text as fast as it is created in the mind is such a large advantage that it in itself justifies the use of a computer. In addition, it is likely that the use of a computer offers an important psychological advantage: When the writer knows that it is easy to make corrections in the text, he or she finds it easier to disregard the risk of making errors while freewriting.

The only significant improvement in this area is through the use of better keyboards; by ensuring that the key characteristics are optimal [14], and possibly through the use of ergonomic or natural keyboards, that reduce the strain on the writer's wrists while touch typing [13]. However, only one writer mentioned that she needed a keyboard that made it possible to type faster.

The computer as a tool for conscious writing and corrections

Even though all interviewed writers use paper copies when editing, the comments indicated that five of them may use an electronic version of the text as a navigation aid and that they may enter minor corrections directly into it.

<u>Organization of input text and information</u>

Four of the writers collected small pieces of text or information in the computer as input material for their writing, and three of them expressed it is a problem to structure and get an overview of their notes. It appears to be common that writers collect material without having any specific project in mind, that they reuse material from one project in another, and that they collect material in a number of different formats. In the future it is likely that writers will use digital pictures as background material for their writing. This requires a tool that makes it possible to select and organize notes in a variety of formats to be used for a specific writing project.

Three writers indicated that they needed a two-dimensional structure similar to mind-maps for organizing the notes, but a hierarchical and more compact listing when using the notes as references during the writing. See fig. 2, following page.

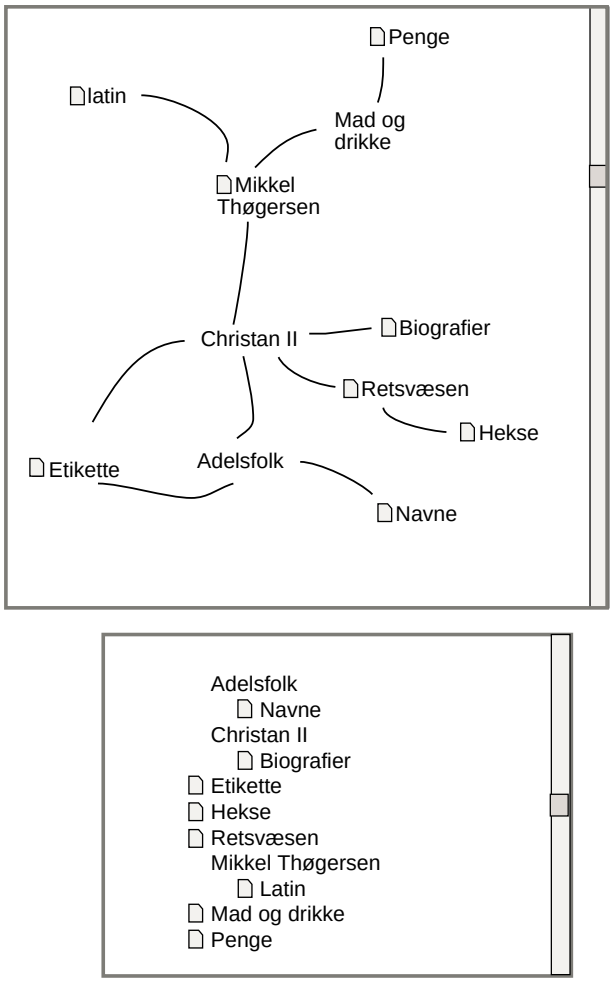

Figure 2: Two-dimensional and hierarchical structure for organizing notes. The contents used in the sketches are based on the Danish writer Johannes V. Jensen's book: Kongens Fald (The Fall of the King) [8].

Retrieval by recognition

One writer suggested a tool for retrieval that made it possible to scroll through thumbnails of both text and pictures, making it possible to find material by recognizing it, without needing to recall any keywords in the material. (Such a function may soon be available in new operating systems.)

Keeping different versions of a short piece of text

Five of the interviewed writers said that they regularly wanted to go back to an earlier version of a sentence or a paragraph in the text. Using the un-do function deletes later additions to the text, and the position of the sentence or paragraph is lost if it is copied to a notepad or another document.

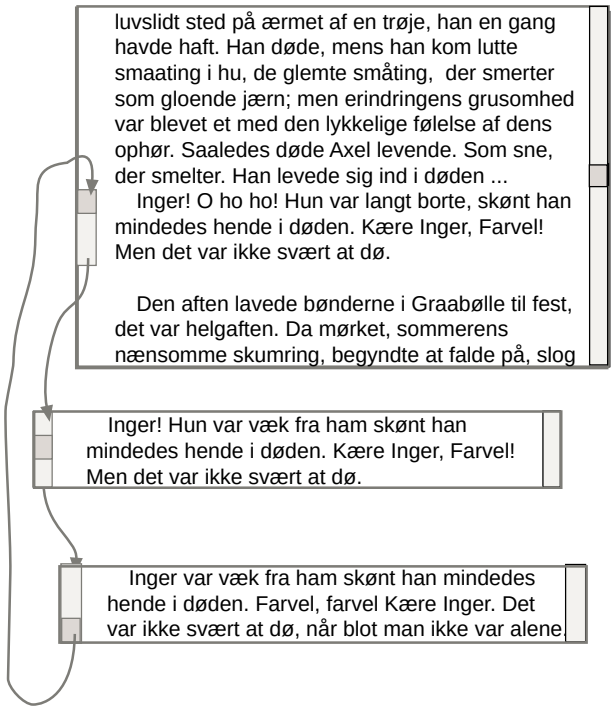

Figure 3: Function for keeping different versions of a short piece of text. Only one version of the text will be shown at a time (the lowest two will be hidden). The fonts in the figure are enlarged for clarity.

Four of the writers expressed that is very valuable to have a function that makes it possible to keep several versions of a sentence or a paragraph linked to its location. I presented three different sketches. The writers agreed that it was essential that the function does not clutter the appearance of the text, and that the different versions are preserved when the document is closed. The result is a function similar to fig. 3. It is possible to preserve a version of a sentence or a paragraph (or any string of letters) by selecting it and either dragging it to the side or pressing an icon, and it is then possible to scroll between the different versions.

Overview with fisheye

I presented a sketch of an overview tool and five of the writers agreed it is very valuable. The overview is made in a separate window such that it does not disturb the visual appearance of the main text, and it utilizes a fisheye effect similar to the one used in the Superbook [9], where the sections in the chapter that the writer is working on are shown, but not the sections in other chapters. See fig. 4 (next page).

Because fiction writers use no section titles and often no titles for chapters, a section break is defined as two consecutive linebreaks (single linebreaks are for instance used in dialogues), and the beginning of a chapter may be defined as the first words after a chapter heading. For the

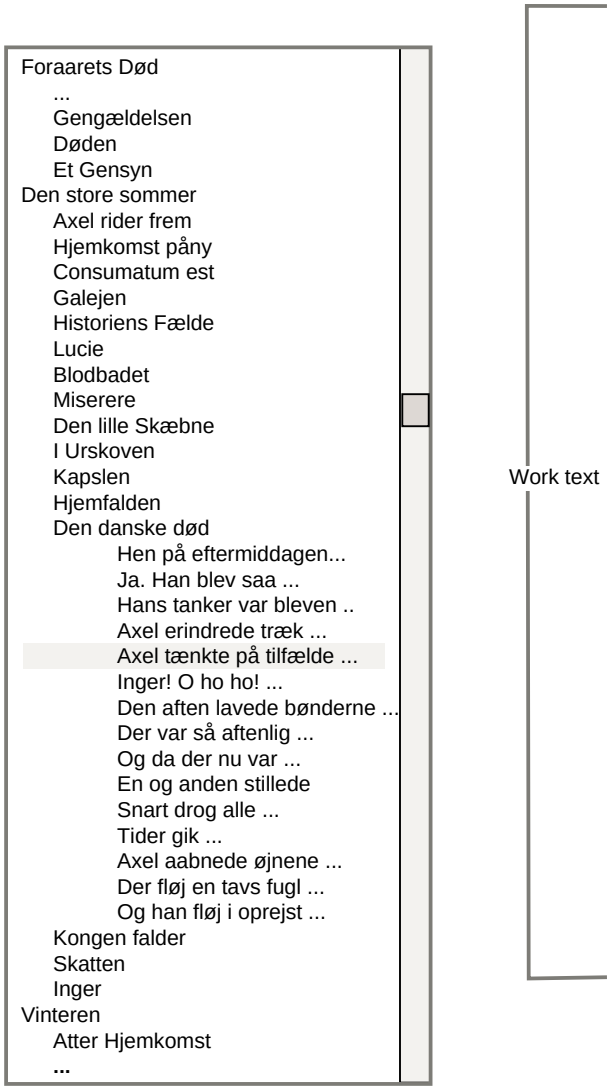

Figure 4: Overview with fisheye and first words of each section. The section pointed out in the Working text is highlighted in the overview.

same reason the first words of each chapter and section are shown instead of headlines. The writers agreed that the first words of each section were good references for navigation, and one of the writers added that they made it easier to detect repetitive beginnings.

Notes that are shown in the overview

All six writers indicated that notes that are shown in the fisheye overview are very valuable. Two of them described how they will use the notes for marking passages that require a rewriting or where a specific piece of information is not available when it is written. This means that the notes make it significantly easier to do uninterrupted freewriting and later to find and correct the parts of the text that need changes.

The interviews showed that ideally it should be possible to make a printout of the text without or with the notes, to make a separate printout of the notes, and that it should be easy to remove all notes from the finished manuscript.

List all paragraphs where a character or a name is mentioned

Four of the writers expressed that it was time consuming and difficult to check the consistency of a story, for instance that a character spoke in the same manner in all parts of it. Four of the writers agreed that it is valuable to have a tool that makes it possible at one time to see or scroll through all paragraphs where the name of a specific character or location is mentioned. Because most writers create their characters through generative writing rather than by planning them in advance, such an improved search tool is more useful than a database with information about characters and locations.

Moving deleted pieces of text to a repository

Five of the writers said that they do not like to delete pieces of text and instead move them to a separate file or to the end of the document. This appears to be a common method for fiction writers. It is psychologically easier to remove a piece of text that the writer has spent time creating, if it is not destroyed but merely moved. A function that makes it possible in a single operation to move a passage of text to a repository will therefore make the editing process faster.

Automatic permutations of words and text passages

I suggested a function that could automatically substitute single words in a sentence according to some predefined rules, for instance always substitute a verb with another verb. Four of the writers expressed that such a function might be fun and possibly useful as a creativity tool. Two of the writers suggested in addition a function that can change the order of sentences or paragraphs in a random manner, a method that sometimes is used as a creativity tool when writing.

Overview of characters and plot

I presented a sketch of a graphical overview of the characters of a story and chapters in it. Three of the writers agreed it could be of some use. However, they stated that an overview showing the events and subplots in different chapters might be more useful than an overview showing what happens to the different characters in each chapter. Two of them stated that because plots and characters are created by generative writing, the overview should not be a planning tool, but a tool for creating an overview of a text that is already partly written. This suggests that some methods for automatically collecting information, for instance about where specific locations or characters are mentioned in the text, may be useful.

Calculation of readability indicator

For children and youth literature, it is often required that the lix-value, indicating how difficult it is to read a text, should be below a certain figure. Three writers agreed that a calculator of the lix-value or other indicators of readability is very useful.

Calculation of number of pages

Three writers agreed that it is useful to have a function that calculates the number of pages of a given size that a text equals. The interview with one writer led to the idea that the function should take into account blank space at the end of a chapter and the amount of dialogue in the text.

New functions of probably low value

An additional number of functions were discussed, but the responses indicate that their value is limited:

- Better management of different versions of manuscripts. One writer suggested this. It is possible that a function for including the last revision date in a paper copy will be of some use.
- Automatic highlighting of dialogue. Two writers agreed that highlighting of dialogue might be useful for checking the balance between dialogue and descriptions. However, it is already fairly easy to see the balance between dialogue and descriptions in a manuscript.
- Automatic highlighting of rhythm or rhymes in words: None of the writers expressed that such a function is of any use for them.
- Automatic reading aloud of text: Two writers expressed they may want to try it, whereas four expressed it was not of any use for them. One explained that the visual look of the text was more important for him than the sound of it, one explained that she read the text out for herself, but that she had to feel the words in her mouth as she read them.
- Electronic thesaurus: Two writers use a paper-based thesaurus, one uses an electronic version. No comments indicated that a more accessible thesaurus will offer any significant benefit.
- Spell checking: Three writers said that they used automatic spell checking after completion and proofreading of a manuscript; one writer commented that a spell-checker often changes a misspelled word to a wrong one.
- Grammar checking: One writer described that other writers need a tool for placing commas correctly.

DISCUSSION

The motivation of the writers and the details they provided indicate that their replies are highly reliable. Despite the differences there is a consistent pattern in how the interviewed writers work. This pattern is consistent with existing literature about good practice for fiction writing.

The results indicate that the first part of the writing of a fiction text is done mostly through a combination of automatic processes with very little conscious control, and that new text during the revision process frequently is generated in the same manner. However, the study did not include direct observations of how writers work during the revision process. It is therefore not possible to describe the precise interaction between writing as an automatic process and consciously controlled work during the revision process.

The results are consistent with a view of writing as a design process involving several conceptual spaces. However, because the study did not include direct observations or verbal reports from writers while they worked, it is not possible to describe the specific types of conceptual spaces and how the work moves between them.

The study identified eleven functions of significant value for writers. The comments from fiction writers indicate that they feel that these functions can make fiction writing significantly easier. However, the writers were only shown rough sketches. The final usefulness of each function will depend on whether the specific design is easy to use and offers a good affordance.

CONCLUSION

The study supports the hypothesis that fiction writers in general are skilled computer users, and that the computer is essential for their work.

The study indicates that the most important advantage of the computer is to make it possible to capture words almost as fast as they appear in the mind of the writer. The study shows that fiction writers to a large extent use freewriting and generative writing, where the plot and the characters are generated as the text is written very fast without any revisions, and where the design of text, plot and characters is done in parallel through a number of automatic processes with little conscious control.

The study shows that fiction writers tend to write first, to plan as they write and to organize the contents later. FictionMaster or other programs for planning a plot and characters will probably make generative writing more difficult, and a program such as Writer's Assistant will also be of limited use for most fiction writers. In contrast, the functions described in this study are potentially much more useful. They make it easier for writers to get an overview of an already written text or to make decisions during editing.

Existing word processing programs do not support a creative writing process very well. As one example, Microsoft Word contains facilities for tracking and highlighting changes. However, during the writing process, a fiction writer needs almost the exact opposite function. It is important that different versions of a sentence or a paragraph are presented in a manner that does not clutter up the appearance of the text, whereas it matters less in which order the different versions have been written.

It is possible that the designers of word processing software have not studied in detail how a text is created and edited. It also appears that even the most advanced word-processing tools today do not fully utilize the dynamic aspects of an electronic text, for instance through more advanced overview tools.

The writing process for articles and other types of non-fiction writing is similar to the writing process for fiction writing. The methods of Elbow and Boice were originally developed to support non-fiction writing [6, 2] (they are for instance taught to journalists). It is therefore possible that the functions described in this paper are also useful for non-fiction writers. Fiction and non-fiction writers have three problems in common: To find the words that convey what they strive to express, to get an overview of what they are writing, and to work fast enough to make a living out of it.

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