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PAPER-AND-PENCIL WRITING
vs.
COMPUTERIZED WRITING

1. INTRODUCTION

Writing, as a productive language skill, can be defined as a messy process in which a person develops ideas, about particular topic, and then organizes them into words, sentences and paragraphs. However easy this process may look, it requires a number of things – organization in the development of ideas, accuracy so that there is no ambiguity of meaning, choice of vocabulary and grammatical patterns appropriate to the subject matter. Writers should be able to produce not only clear and correct sentences, but whole pieces of communication. Furthermore, they should know how to link them. They appear to go through certain processes which should lead to successful pieces of written work – motivation, brainstorming, planning and outlining, drafting, revising. It is these demands that make people characterise the writing process as times of pencil-chewing, fiddling and sighing.

The nature of writing can be described as both private and public. It is private because the writing itself is solitary. The writer is a lonely figure, condemned to monologue. He is deprived of body language, gestures, reactions of readers, the tone of his voice. On the other hand, it is public because most of the writing is intended for an audience.

Writing, as a way of communicating thoughts, goes back to early history of mankind. As technology has developed, tools for writing have become simplified and easier to use. The invention of pencil was of the utmost importance. Throughout centuries, pencil has had no rival. Nevertheless, decades ago it became apparent that the hallmark of writing – pencil – had begun to lose its force. Now, it has found its authentic successor, computer. Computer is the twentieth century born and bred product of

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society. In its experimental form, it covered a few urban areas. Now it is possible to ring the northern hemisphere. Among all the other purposes computer has, the most common educational use is for word processing. This fact raises a question – do computers have a positive effect on the writing process? The following research will try to answer it.

2. RESEARCH METHODOLOGY

The research was meant to find the possible differences between the writing process done by students on computer and on paper. The points taken into consideration are the quantity of writing, the quality of writing and the elements that shape the process of writing, such as, motivation, engagement. Eight students were engaged in this. Four males and four females were chosen in order to avoid gender discrepancy. All of them were of the same educational level, that is, in the third year at University. They are all students of the English language at the Faculty of Philosophy, University of Novi Sad. Their writing ability can be described as high. The task was to write an essay on the given topic – How would you change the curriculum? The choice of such a topic was due to the fact that the topic itself, for the purposes of the research, had to be an inspiring one. The presumption was that, as university students, they were familiar with the topic. Half of them were asked to write their essays by hand, and the other half by computer. Again, gender equality was not neglected. Two males and two females wrote by hand, whereas two males and two females wrote using the computer. The duration of the writing was restricted to one hour. The research was performed on Friday, April 23rd, 2004 at 12.00, in the computer classroom at the Faculty of Philosophy, University of Novi Sad. The students who wrote on paper were asked to hand in their essays without making the final copy. This was done so that their process of writing could be observed. The students who wrote on computers were all using the same software – Microsoft Word, and they did not have any typing or word processing training prior to the research. The type of students' writing was individual. After the writing of the essays, all students were interviewed. All questions were open-type and aimed at their process of thinking. The open-type was chosen because it does not imply any particular or desired answer; the students were given the opportunity to express their own thoughts, not led by any implications. This was done in order to gain more information about their process of thinking, whether it was changed or not by computers. Interviewees were given approximately the same amount of time to answer all questions.

3. RESULTS

1.1. ESSAYS

As far as the quantity of writing is concerned, it was measured by word count. The results are the following (Table 1):

hand	M1	M2	F1	F2	app. no
written	258	376	350	499	370.75
computer	M3	M4	F3	F4	app. no
written	510	474	550	489	505.75

The capital letters in the table above denote the gender of the students. In the last column of the table, the approximate number of words used is given.

Predictably enough, the essays written on computer were much more legible, easier to survey, with few spelling mistakes. However, the final versions of the essays written on computer did not show what changes were made during the process of writing; whereas, the essays written on paper include both minor and major alternations that the essays had undergone. The changes were the following – choice of vocabulary, inserting additional information, spelling, addition/omission of articles, sentence structure, word order. None of the essays had changes in the organization of the paragraphs. The very first part of the writing process, the brainstorming, was included only in the essays written by F1 and F2.

1.2. INTERVIEW

The interview consisted of eleven open-type questions. Each question with its answers is shown below. Nevertheless, not all of the individual answers will be presented, only the one which is the summary of all answers given on a particular question. This is done because of the similar content of the answers gained. However, when there are answers which are different from the others, they are presented separately. After each answer, there is the percentage of the answers included.

Q1 – HOW DO YOU FEEL ABOUT WRITING IN GENERAL?

A1 – I'm not really fond of it. It requires a lot of thinking, for example, form, ideas, organization, vocabulary. It is boring, especially if the topic is an uninspiring one, which is the usual situation. One should have talent for it. You can learn the form, but no one can teach you how to be creative. When compared to speech, writing is permanent, cannot be easily changed, it should be linked appropriately; whereas, speech is more free, that is, if you forget

something you can add it easily. Although I must say it is a good exercise for learning a language. (62.5%)

A2 – I like to write, because I can say what I think, use the words I want to use, and use the ones I know. I see writing as the way of surviving in this world. I couldn't do without it. (37.5%)

Q2 – HOW DO YOU FEEL ABOUT WRITING ESSAYS ON ASSIGNED TOPICS?

A1 – The topic is very important. It should be interesting, inspiring, well-defined, clear, adequate to our knowledge. The rules of the form of the essay should be followed, which has its disadvantages. There is the problem of getting used to it. But once you get used to it, the rules of the form really help you do your task. The choice of vocabulary, sentence structures, opening aces – it all kills the joy of writing. In addition, when you know that the essay writing is compulsory, you immediately have negative approach to it. (100%)

Q3 – WHAT ADVICE WOULD YOU GIVE A PERSON WHO IS GIVEN AN ESSAY TO WRITE?

A1 – First, do the brainstorming, write your ideas, thoughts, and then organize them into paragraphs – introduction, body, conclusion. Sometimes it is good to write some fragments, or even the whole sentences that you can use later. You can also write some key words. It is important to have a topic sentence for each paragraph. Pay attention to the choice of vocabulary, grammar, the length and the type of the essay, style of writing. Always stick to the topic. (88.5%)

A2 – The form is the most important thing. The content is not that relevant. You should stick to the topic, not write nonsense, and pay attention to the form. (12.5%)

Q4 – IF YOU WERE THE INSTRUCTOR WHAT INSTRUCTIONS WOULD YOU GIVE FOR WRITING THIS ESSAY?

A1 – I would put emphasis on the form, organization of the essay. It should have intro, body, conclusion, and all those parts should be linked logically. Maybe give some additional explanation about the topic, instructions not to write too generally because they wouldn't be able to put everything in such a short form. (75%)

A2 – They shouldn't waste time on thinking what word to use. If they can't remember it right away, they should use some other word and continue writing. (12.5%)

A3 – The topic is clear, so no instructions are needed. (12.5%)

Q5 – DESCRIBE YOUR PROCESS OF THINKING BEFORE YOU STARTED TO WRITE.

A1 – I thought about the topic and tried to organize my thoughts, what I should say in the introduction, what in the body, what in the conclusion. The

most important thing is to come up with the topic sentence and the intro. The problem was that I didn't do the brainstorming because it wasn't possible. I had to do it in my head. (62.5%)

A2 – First I wrote all the things that came to my mind. I knew what to write about because I am familiar with the topic. When I wrote it all down, I organized it, added some examples and started to write the essay. (25%)

A3 – I immediately started to type. Later, while I was writing I made changes, deleted something or added something, and it turned out that my first sentence was completely deleted eventually. I don't organize my essays in advance. (12.5%)

Q6 – WHAT DID YOU WORRY ABOUT?

A1 – What to write about, to give good examples. (12.5%)
A2 – Vocabulary, spelling, sentence structure. (50%)
A3 – Nothing. (25%)
A4 – Who is going to read it? (12.5%)

Q7 – DID YOU MAKE ANY CORRECTIONS IN YOUR ESSAY? WHY?

A1 – Yes. Most of these were spelling and choice of vocabulary. Sometimes I changed the sentence structure, but just after I had begun to write the first version. I changed it in my mind. (50%)

A2 – Yes. I changed sentences a lot. If a sentence didn't match with what was previously said, I deleted it. If I wasn't sure what to say next, I typed something, read it, changed it, added something and so on. Most of the changes concerned sentence structure. (50%)

Q8 – DID YOU HAVE ANY PROBLEMS WITH STARTING TO WRITE? WHY?

A1 – No. I am quite familiar with the topic, so I knew what to write about. I had an inspiration, and I knew it wasn't meant to be marked, so I was relaxed. (50%)

A2 – Yes. The first sentence is very important. It should be interesting, provocative, keep reader's attention, original. Maybe the problem with starting to write has to do with the process of thinking, because human mind doesn't work in an organized way, and our writing should be very organized. (50%)

Q9 – DID YOU HAVE ANY PROBLEMS WITH THE ORGANIZATION OF THE ESSAY?

A1 – No. I did the organization at the very beginning. (37.5%)
A2 – No, because it was easy to organize ideas. (37.5%)
A3 – There was no organization, because I didn't have a piece of paper to write it on at the beginning. Every new thought meant a new paragraph. (12.5%)

A4 – I didn't think about the form. The important thing was the idea itself. (12.5%)

Q10 – DID YOU HAVE ENOUGH TIME?

A1 – Yes. It was just enough. (75%)

A2 – No. I didn't have time to read the essay when I finished it. (25%)

Q11 – HOW WOULD YOU COMPARE WRITING BY HAND AND WRITING BY COMPUTER? WHAT ARE ADVANTAGES AND DISADVANTAGES?

A1 – Advantages of writing by computer are numerous. The text is legible, neat, you can easily add or delete something, check spelling and grammar, no one can see the changes you've made to the document before the final version. You can start writing a sentence, then change it to some extent or completely. It is easy to play with the text. Disadvantages are the possibility of not saving the text due to some mistake or sudden lack of electricity. Also computers are not available to everyone at any time, at any place. It is not practical to write brainstorming on them. I like to do it on paper. The problem is also typing. I write faster than I type. I'm used to writing with pencil. Disadvantages of writing by hand are untidiness when making changes. You need extra time to rewrite the final copy of the essay. Sometimes it is illegible. You can make so many changes that you yourself wouldn't be able to say which paragraph or word goes where. Although I must say that writing by hand is more natural to me.

4. DISCUSSION

As the quantity of writing is concerned, results shown in Table 1 indicate that students who write with word processors tend to produce more text than students who write with paper and pencil. The approximate number of words used in essays written on computer is 505.75, which is nearly 25% more than the number of words written on paper. The almost complete absence of spelling mistakes in essays written on computer is the result of the heavily enhanced word processing software. The information provided by the interview shows that students made more revisions when word processors were used. Question number 7, concerning corrections in an essay, is a clear proof of that. Half of the students answered that they made spelling and vocabulary corrections, and only rarely changed the sentence structure. The other half said that they made a lot of changes, especially sentence structure. The former were the students who wrote on paper, and the latter were those who used computers. This phenomenon can be attributed to editing capabilities, embodied in keyboard features. When writing on paper, it is very confusing if there are several paragraphs to be radically reordered. It becomes a complete mess. However, there are no qualms when the possibility of 'cut' and 'paste' options is present. The text is more moveable. This can lead to the hypothesis that the writing process itself is different when done on paper and on computer. When writing on paper, the process of writing seems to be more linear. Before producing the final version, it generally consists of brainstorming, outlining ideas, writing the first draft, revising it, writing the second draft, and proof reading.

Nevertheless, when doing it on computer, the process of writing seems to be more integrated. Students tend to record their ideas and modify them before completing an entire draft. Furthermore, students appear to be more willing to abandon ideas in the middle of writing in order to continue with a new idea. This then leads to the conclusion that the process of revision starts earlier, that is, before the entire draft is produced. They edit their texts while transforming their thoughts into words. The only concern that students had when writing on computer was the absence of a piece of paper for jotting down their first thoughts about the topic. All students find brainstorming on computer inconvenient. A possible explanation of this could be that the students have been taught to use pencil and paper for writing essays throughout their education, while computers are rather new devices. Therefore, writing produced on computer is described as "unnatural". Furthermore, computers are not available to all students. Thus, they still feel inhibited to some extent when using computers. However, they are at the same time aware of the advantages computers have.

5. CONCLUSION

To sum up, the students who wrote by computer produced longer essays compared to the students who wrote by hand. Thus, the quantity of writing is changed by computers positively. As the absence of spelling mistakes and legibility of the texts are concerned, it goes without saying that the essays written on computer have the aforementioned characteristics. It is the general opinion of the students that a piece of paper is needed for brainstorming. However, one can be puzzled by this fact because computers do not restrict oneself to writing essays only. There is no reason for not jotting down one's thoughts on computer.

The research is yet another illustration of the widely known statement – Nothing is perfect. However, as shown above, computers are equipped with many more advantages than paper and pencil. They increase motivation, engagement, help students to develop their writing skills, and provoke the revision process much earlier, which inevitably leads to higher quality writing. No writer lets his manuscript go forward without revision, so the earlier the revision begins the higher quality the product.

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REZIME

PISANJE UZ POMOĆ OLOVKE I PAPIRA I PISANJE NA RAČUNARU

Prilikom pisanja eseja neophodan je razvoj i organizovanje ideja, što predstavlja proces često okarakterisan kao veoma zahtevan. Dobar esejista mora da raspolaže bitnim i osnovnim podacima na određenu temu, da bude upoznat sa formom eseja, da bude vešt u logičkom povezivanju delova eseja. Ovaj rad je prikaz istraživanja koje pokušava da pokaže da li različita sredstva pisanja imaju ikakav uticaj na taj toliko zahtevan proces pisanja. Sredstva koja su korišćena su olovka i papir i računar. Razmatra se kvantitet i kvalitet pisanja i elementi koji oblikuju proces pisanja, kao što su motivacija i angažman.

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