

Complex e-learning system on word processing*

Gyöngyi Bujdosó

Department of Computer Graphics and Library and Information Science
Faculty of Computer Science, University of Debrecen
e-mail: bujdos@inf.unideb.hu

Abstract

Word processing is an activity performed more and more frequently, though it has only a marginal role in teaching and learning computer science. In the curricula, it appears briefly as a technical issue, e.g. learners have to study the kinds of menus and icons included (typically and only) in MS Word, and what these menus do in actual application.

Nevertheless, word processing is much more than applying some icons and menus in a word processor. Aesthetic documents can be made through collaboration in typography, design, grammar and – last but not least – the word processor or the typesetting program.

An e-learning course is under construction on word processing, called $\mathcal{T}\mathcal{E}\mathcal{M}$. The course includes four main fields: typographical recommendations, design samples, important grammar rules and programing in $\mathbb{T}\mathbb{E}\mathbb{X}$.

This e-learning course can be used in blended courses and distance education in lifelong learning and lifewide learning studying word processing or $\mathbb{T}\mathbb{E}\mathbb{X}$. It can be used as on-line help in word processing.

This presentation tackles the main objectives of $\mathcal{T}\mathcal{E}\mathcal{M}$, its knowledge base, the connections of the four fields and treats some pedagogical aspects of e-learning and features applied in the system.

Keywords: e-learning, pedagogical aspects e-learning, word processing, typography, learning and using $(\mathbb{L})\mathbb{T}\mathbb{E}\mathbb{X}$, digital literacy, motivation

MSC: 97C90, 97U50

1. Introduction

What is generally meant by word processing is the inputting of a shorter or longer text into a computer. But word processing, i.e. the shaping of a text is in

*The research was supported by the (Hungarian) National Office for Research and Technology (NKTH) under grant No. GVOP-3.2.2-2004-07-0021/3.0.

reality much more than that: an iconographic means applied daily by many. That is what happens when a report, a letter, a curriculum vitae is being composed or an invitation card, a picture card or a web site is prepared. Designing and composing multimedia documents is also becoming more and more widespread. Each of the listed areas requires special knowledge concerning the iconographic implementation of the editing process if and when the goal is practical and aesthetic representation.

Our aim is the elaboration of an online e-learning system called $\mathcal{T}\mathcal{O}\mathcal{T}\mathcal{E}\mathcal{M}$ which is interdisciplinary and informing, has a motivating effect, is capable for developing special competencies, offers an appropriate climate for learning, comfortably applicable to both permanent learning and online help, and is greatly efficient in data management and services.

2. Knowledge base of $\mathcal{T}\mathcal{O}\mathcal{T}\mathcal{E}\mathcal{M}$

Elaboration of the e-learning material includes the following major areas: basic material of text editing (editing, Hungarian language, \TeX , means), typographical and fine arts description, sample store as well as definition of vantage points.

2.1. Basic material for text editing

2.1.1. Typographical recommendations

Collection of editing rules and recommendations complete with sample illustrations (see e.g. [4], [5]). Beyond the general definitions it contains particular recommendations and usable patterns for various types of documents (theses, reports, autobiographies etc.). Figures 1 and 2 show some samples of editing recommendations as well as types and page design.

The learning design is built on series of such patterns and recommendations [13]. In the process of arranging the material the guarding of our typographical traditions has been kept as a crucial element (see e.g. [9]).

2.1.2. The Hungarian language

Documents with beautiful typesetting might show grammatical mistakes or inaccurately used punctuation marks which then appear more accented than before. The data base includes the valid grammatical rules related to the faulty cases illustrated on sample pages, demonstrating their accurate as well as inaccurate application (see Figure 3).

2.1.3. \TeX

In order to show how to create patterns and forms the learning material employs the $(\text{\LaTeX})\text{\TeX}$ system. It contains, as related to each inside pattern, the general description of application pertaining to commands (environments etc.) and also the source code (in copy ready form), of the particular example [14, 15].

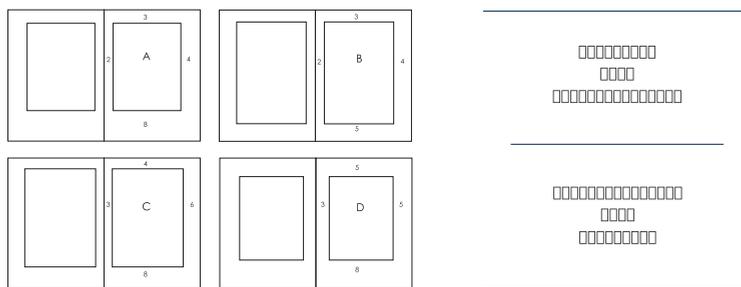


Figure 1: Editing of text and publication: patterns referring to margin rates and how to break title lines

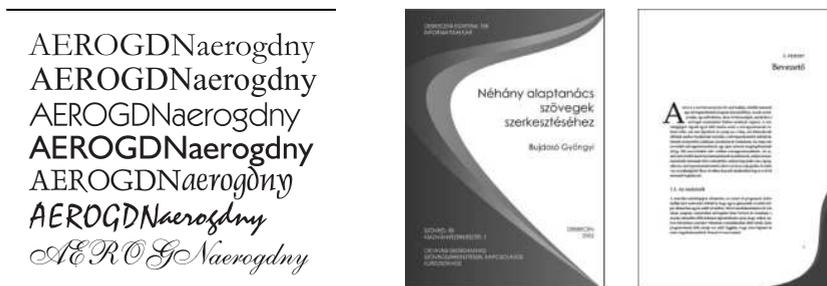


Figure 2: Types and book design ([8])

<i>Improper</i> ✗	<i>Proper</i> ✓
Kaptok egy - egy almát! Nantes-ban voltam Yves-vel. A betű-és lapméret megadása 15-20 kiló őszibarackom lesz.	Kaptok egy-egy almát! Nantes-ban voltam Yves-vel. A betű- és lapméret megadása 15-20 kiló őszibarackom lesz.
<i>Improper</i> ✗	<i>Proper</i> ✓
A magyar - angol szótárban A Dózsa-Fradi meccsen volt. Az év tavaszi-nyári divatja Az 1848-49-es változások Meseváros, Futrinka u. 15-17.	A magyar-angol szótárban A Dózsa-Fradi meccsen volt. Az év tavaszi-nyári divatja Az 1848-49-es változások Meseváros, Futrinka u. 15-17.

Figure 3: Grammar: accurate and inaccurate application of dashes

2.1.4. Other means

Beyond the T_EX programing the learning material includes a brief introduction to the use of the necessary auxiliary programs (drawing programs, integrated

environments).

2.2. Typographical and fine arts description

The learning material offers multifarious information from the area of typography. There is a wide selection of material ranging from the introduction of several (letter) types (fonts) to the design of documents prepared by typographers (see e.g. [9]). External web pages which are referred to may add to the patterns the learning material offers for further elaboration. Another possibility is to help prepare illustrations. The fine arts section contains works which might be of use in the formal elaboration of illustrations, e.g. how to achieve balance, how to apply emphasis and colors.

2.3. Pattern store

This is a store for design patterns of various document types. It contains as attached to the learning material the various page designs and patterns showing the different parts (letters, tables, figure samples etc.) of printed and digital documents. There is a reference collection of external patterns supplementing the store of internal patterns. The main objective is the revival and guarding of our typographical traditions.

3. Linkage points

The above listed topics are intricately linked. The online learning material can work effectively only as the result of a most complete representation of the links. The related information of various parts of documents can be reached from the sample pages as well as from the related topic lists of the fields (see Figure 4).

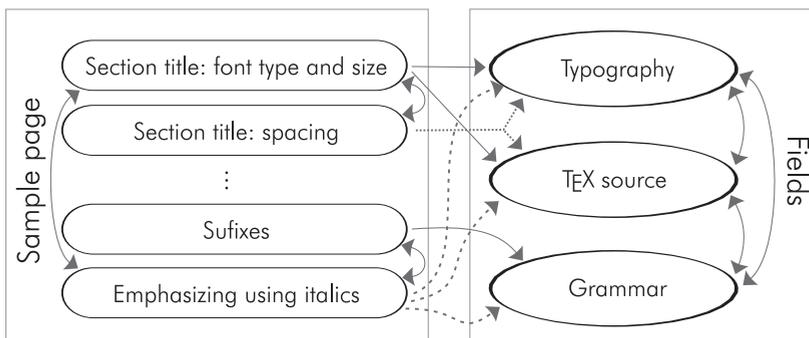


Figure 4: Links of the various parts of the learning material

4. Pedagogical aspects of e-learning

This section includes some strategies and descriptions on which further stages can be built. The concerned topics concerned (as well as those of the previous sections) have a vast literature, so only a few publications are mentioned here which study the topics in detail.

In the following, some aspects of developing the e-learning system are described which introduce new methods, means and procedures in the online learning material that endeavours to implement typographical knowledge management in various areas. They are as follows:

The learning material and word processing with it turns interdisciplinary

Instead of the usual and accepted point of view which puts the emphasis on means and tools in education the teaching of word processing is now based on editing and linguistic ground. The starting point is design forms which are connected with T_EX source codes, editing recommendations, fine arts works and grammatical rules ([7]).

The concept of digital literacy is expanded

There is an emphasis on the conscious use of means which is quite up-to-date at this point of development in the global information-communication driven society. It makes active the knowledge of Hungarian and calls attention to protecting our national values. It offers an alternative to uniformization, concerning form, content and means as well ([4, 24]).

It offers and delineates an editing program

T_EX, a freely available breaking and typesetting program is introduced. It is suitable to sort out word processing problems ([6, 20]).

Motivation is being advanced

Motivation becomes more and more necessary if efficiency of education in general and efficiency of online learning materials in particular is the goal. The chief means to achieve these goals are design of form, fine arts products, personalized environment and content ([1, 2, 17, 19]).

It makes the e-learning environment more efficient

It introduces new climate dimensions which improve the already existing cyber climate and make the learning process more comfortable and unimpeded ([10, 23]).

Development of competencies is emphasized

Beyond the development of basic competencies in informatics it helps develop key and special professional competencies ([12, 18]). Apart from practicing word processing it offers file management, studying and converting, downloading and sending various files, application and installation of programs and integrated environment as well. It also contributes to language and aesthetic education and to knowledge about editing and typography.

It supports more learning methods than it has so far been possible

By offering searches, lists, notes etc., it is possible to introduce learning methods potentially present but so far not utilized in the e-learning material. All becomes possible: learning through learning design, personalization of learning design, individually defined distribution and rapid repetition of the learning material. When it is used as online help, there is a possibility for fixing through practice ([3, 11, 16, 21, 22]).

5. Conclusions

The teaching of digital literacy in an extended way has a place both in secondary and higher education. It fits in and is a good supplement to teaching informatics in secondary schools while its application in higher education responds to social expectations as well. The learning material linked to various topics or scientific areas can be considered as part of Lifelong Learning as well as Lifewide Learning.

The online e-learning system creates a knowledge base on the web which is directly linked to editing and typography. This has been considered so far missing and information of this kind is badly needed on the web. Printed books on these topics are also hard found.

The design and information material of the online system now under development can be used in many areas and is transferable and promotional. Until then the details of the complete knowledge material will be accessible through the *TeTeM* online information system, the loading of which with content has been started and will remain accessible until the projected e-learning system is ready. Hopefully this will serve as useful auxiliary material until the online e-learning system, displaying typographical knowledge management becomes fully operational.

Acknowledgements. The author is grateful to Professors Mátyás Arató, Katalin Bognár and Dániel Benediktsson for their helpful comments and suggestions.

References

- [1] ARATÓ, M., BUJDOSÓ, GY., New style in teaching word processing, *Teaching Mathematics and Computer Science*, Vol. 4/2 (2006), 417–426.

- [2] BARKÓCZY, I., PUTNOKY, J., Learning and motivation [Tanulás és motiváció], *ELTE*, Budapest, (1979).
- [3] BRITAIN, S., A review of learning design: Concept, specifications and tools, *A report for the JISC Pedagogy Programme*, (2004), http://www.jisc.ac.uk/uploaded_documents/ACF83C.doc
- [4] BUJDOSÓ, GY., Teaching word-processing at our university, *Proceedings of Informatika a felsőoktatásban '96* (August 27–30, 1996, Debrecen, Hungary), 101–109, (in Hungarian), <http://www.iif.hu/rendezvenyek/networkshop/96/vegl.html>
- [5] BUJDOSÓ, GY., With or without typography, *Proceedings of EMES '97* (June 30 – July 1, 1997, Oradea, Romania), in: *Anal. Univ. Oradea*, Univ. Oradea, (2001), 11–16.
- [6] BUJDOSÓ, GY., Wherefor we love \TeX , *FairPrint 2004* (February 13–15, 2004, Visegrád, Hungary), (in Hungarian), <http://www.fairprint.hu/>
- [7] BUJDOSÓ, GY., Necessity and methodes of an online e-learning system in teaching word processing, *Proceedings of Informatika a felsőoktatásban 2005* (August 24–27, 2005, Debrecen, Hungary), (in Hungarian).
- [8] BUJDOSÓ, GY., Some recommendations on word processing texts: 1. Types, Textbook, Faculty of Computer Science, University of Debrecen, mobiDIÁK, Debrecen, 2005, (in Hungarian).
- [9] BUJDOSÓ, GY., Fontes et dessinateurs de fontes hongrois contemporains, *Cahiers GUTenberg*, Vol. 46–47 (2006), 43–57, <http://www.gutenberg.eu.org/publications/cahiers/>
- [10] BUJDOSÓ, GY., Introducing cyber climate dimensions into designing e-learning systems, (2006), (submitted).
- [11] BUJDOSÓ, GY., Typography based on-line help on \TeX , *TUGboat 27* (2006), 28–31, <http://www.tug.org/TUGboat/>
- [12] BUJDOSÓ, GY., Word pocessing to improve competences, (2006), (in Hungarian, submitted).
- [13] BUJDOSÓ, GY., New ideas in typographical knowledge management, Ph.D. Thesis, University of Debrecen, Faculty of Computer Science, (2007), <http://www.inf.unideb.hu/~bujdoso/>, (in Hungarian).
- [14] BUJDOSÓ, GY., FAZEKAS, A., First steps in \TeX [\TeX kezdőlépések], *Tertia*, Budapest, (1996), (in Hungarian).
- [15] BUJDOSÓ, GY., WETTL, F., On the localization of \TeX in Hungary, *TUGboat*, Vol. 23/1 (2002), 21–26, <http://www.tug.org/TUGboat/Articles/tb23-1/bujdosowettl.pdf>
- [16] CLARK, D., Learning design and e-learning, *White paper, Epic Group plc*, Brighton, UK, (2003), <http://www.epic.co.uk>

-
- [17] CLARK, D., Motivation in e-learning, *White paper, Epic Group plc*, Brighton, UK, (2003), <http://www.epic.co.uk>
- [18] DALTON, D. W., HANNAFIN, M. J., Effects of word processing on written composition, *J. Educational Research*, Vol. 80/6 (1987), 338–342.
- [19] HODGES, CH. B., Designing to motivate: Motivational techniques to incorporate in e-learning experiences, *The Journal of Interactive Online Learning*, Vol. 2 (2004), 1–7, <http://www.ncolr.org/jiol/issues/PDF/2.3.1.pdf>
- [20] NAGY, B., Kényszer szülte tökéletesség, *Magyar Grafika*, Vol. Expo (2005), 87–89, <http://www.mg-online.hu>
- [21] NICHOLS, M., Teaching for learning, *TrainInc.co.nz/Books*, Palmerston North, New Zealand, (2001), www.traininc.co.nz/tf1/
- [22] NIELSEN, J., Jakob Nielsen on e-learning, January 2001.
- [23] SAIRIO, M., Augmented reality, (2002).
- [24] VEGA, E. S., SCHNACKENBERG, H. L., Integrating technology, art and writing: Creating comic books as an interdisciplinary learning experience, *Association for Educational Communications and Technology*, Vol. 27 (2004), 818–823.

Gyöngyi Bujdosó

Faculty of Computer Science
University of Debrecen
H-4010 Debrecen, P.O. Box 12
Hungary