Textbooks in three dimensions (linking in electronic textbooks)[1]

Nebojša Mrđa[2]

[2] Faculty of Political Science, University of Belgrade, Serbia
e-mail nebojsa.mrdja@fpn.bg.ac.rs

Abstract: *University (and school) textbooks must be, in electronic versions, available on the websites of educational institutions or teachers and they should contain a number of links to other websites where students can find additional information on the teaching matter. Learning is an individual process, but students should be encouraged to go to the broader and depeer of the teaching materials above the minimum required level. Routing students to additional texts, images, graphs, tables, video clips, etc. can be used for all students including those who are able to effortlessly acquire knowledge by reading testbooks written exclusively in textual form. The widespread use of links in electronic versions of textbooks can increase the efficiency of the individual's learning and may increase the overall quantitative and qualitative effects of learning of the entire student population.*

Keywords: *linking, textbooks, Internet*

1. INTRODUCTION

This paper was created as part of a continuous process of self-reflection on my job as a lecturer at the Faculty of Political Science in Belgrade on courses "Informatics" i "Internet and new media technologies". During the completion of the work on the textbook "Informatization of the society – new opportunities and huge consequences" I noticed that the use of links in the electronic version of the text can be achieved multiplier effects and ease some of the difficulties faced by lecturers at universities and authors of university textbooks. This applies, for example, that:

- every textbook author knows that it is not possible to include all the content he'd like,
- often happens that students feel that some parts of the textbooks are not elaborated in detail and some parts are unclear
- it is often necessary to pass over couple of years for the publishing of the innovated version of the textbook,
- there is a different level of prior knowledge of students about some important issues that should have been learned in previous years of schooling,

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- for some students written text is enough, some require a graphical presentation and some numerical – tables,
- there are ready quality educational content on the Internet that can be directly used, etc.

The purpose of this paper is to make teachers and authors of textbooks for all educational levels place their books on the Internet, to fulfill them with links to relevant educational content and contionously update them with new knowledge and links.

2. IN THE CENTER OF THE EDUCATIONAL PROCESS ARE STUDENTS, NOT TEACHERS

Time when teachers were in the center of educational process and when what mattered the most were words pronounced in the amphiteaters and classrooms has passed. Now their role is to ensure to students learn as much as possible. In my teaching job at the Faculty of Political Sciences in Belgrade for a landmark and inspiration I chose Don Tapscott views published in 1999 in the article "Educating the Net Generation" including eight changes brought by the introduction of interactive learning in the process of education:

- "The transition from linear, for example, reading a book from the beginning to the end, the non-linear ways of processing information, such as parallel and non-sequential downloading information from the Internet and television,
- changing from giving instruction to the process of construction and development, which means that teachers instead of broadcasting knowledge give instruction to listeners how to get to the desired knowledge,
- locating the learner at the center of the education process, rather than teacher, which increase learners motivation for learning and the role of the teacher remains crucial for the process but it becomes different,
- instead of absorbing teaching material students have to learn how to learn, which includes not only the analysis of facts but an ability to synthesize facts and knowledge,
- transition to a lifelong, continuous education rather than a system in which the graduation means the end of this process,
- transition to learning adjusted to the individual rather than learning the same program for all, what the use of digital media can provide,
- learning as fun instead of learning as torture, and
- change the role of teachers rather than transmitters of knowledge becomes one that allows for the realization of those social activities."(Mrdja, 2016)

Many teachers have already included interactive teaching methods in education and this can not be done in the same way but it would be good to encourage teachers to take up new opportunities. This, of course, does not mean that everything has to be replaced in the education process whose essential characteristics have not changed for centuries, but many steps and procedures can be upgraded. Exam procedure in which the student and the teacher look "eye to eye" would be difficult to be replaced by some new technological solution but in the process of individual learning can be incorporated entirely new procedures and technological solutions.

3. LINKING

Linking in this paper indicates that by clicking on a certain place on the screen computer user access to a website where is set a certain set of information. Of course, linking is technically complexed and very important phenomenon in the history of computing and the Internet, but for purposes of this paper is not of importance. This is indeed true for many other things in the field of computers and the Internet because for a very large majority of computer and the Internet users is most important to decide how to use them in the specific field of their work in which is usually not necessary to know very complexed technical aspects of computers and the Internet.

Linking can be used in very innovative ways in many areas. Eg., in journalism is developed a special mode called "link-journalism" which is very elaborated and can be a useful example of how linking can be used in different areas. Bojana Barlovac in the article "Linking in web journalism" points out that the introduction of links in the structure of the web news creates a completely new architecture that overcomes space and time and then describes the possibilities for linking, explains how to create lethal link, describes the types and functions of the links, advises what should be and what should not be done in linking, highlights best practices and refers to the regulation. (Barlovac, 2011).

Here it is useful to specify one of the most famous examples of linking that applies to the case when the Republican Party in 1996 on their website set up a link to a website a competitive Democratic Party, which, however, did not follow the example of their opponents (Štambuk, 1998). Relations between the two major parties that operate in the political (two-party) system of the United States, of course, is special politicology theme but this example may be useful for university teachers who can route students to other authors and even those who represent different points of view. Every scientific knowledge can and should be subject to continuous review and their authors should not be scared of that. If that had not been in previous years, decades and centuries in universities would be taught the same as in the Middle Ages.

It's been over 15 years since the MIT (Massachusetts Institute of Technology) posted numerous articles, presentations and others materials used in the their teaching curriculums on their website. Many other educational institutions around the world have done the same, so there's no reason to do as much as possible at domestic states universities. In the general interest of the citizens is to be educated, so whoever who wants to learn something it would be better if he learns according to the accredited university program.

Numerous "open educational resources" are available on the Internet.   In the master work "The spreading of knowledge in the digital environment – Open Educational Resources" Jelena Bogdanovic pointed out that the Internet spawned a whole movement around the idea of openness which is, among other things, led to open source software and open educational resources. It is the abundance of educational material that can not wait to be noticed and used for learning and this can be achieved if a large number of authors of university textbooks decide to link in electronic textbooks and work like catalyst in that proces.

4. LINKING IN THE ELECTRONIC TEXTBOOKS

All authors of printed textbooks know that many students buy illegal copies of textbooks and that it is very difficult to control it. These copies are often reduced, as the result of lower prices of textbooks, two pages to one and it makes it more difficult to read and learn. A long time ago I decided to put my textbook on a personal website where everyone can download

them for free because it is better if I do it myself rather than someone else. I did that with the latest textbook "Informatization of the Society – new opportunities and huge consequencies" and that electronic version contains a number of links to different websites that students can use to learn.

Due to the limited scope and purpose of this paper is difficult to list all possibilities of making useful links. It would be good example if this text contained some links. These links can be identified by a different, probably, the blue color, and if reader just click on that places he will be transferred to other website content. Though the title of this article is referred to textbooks, everything above can be used, for example, in writing scientific papers. These papers can contain links and it might be useful to readers and reviewers who prior to their publication in journals should give their judgment. Now it has been customary in the footnotes do not cite sources of literature but it works by referencing the text with the fewest characters. If the authors of scientific papers put links instead of writing a quote or paraphrasing, it would be easier for reviewers to form an opinion on the paper because they get a direct insight into the quoted material. In the time when production of scientific information is rapidly increased for reviewers is difficult to obtain and read printed literature.

The title of this paper has been given a name of a third dimension because it is reminiscent of a special kind of children's picture books in which with opening a new page third dimension shows up. Thus, for example, was in the case of a picture book Hansel and Gretel with opening of Grandma's house. In the case of printed textbook pages have the width and height but with links in their electronic versions will be open up that the third dimension (depth) to enable the reader to go deeper into the matter.

5. CONCLUSION

Innovations in the field of information technology every day bring new opportunities to solve problems and improve the functioning of various organizations and processes. It is no longer a topic for specialists but for, almost, everyone. The question of the content and scope of learning materials, which usually consists of a textbook, is very important for teachers and students. Textbooks are often the subject of criticism of students, parents and different groups participating in the political process and some of them easily provide estimates that they are too large, and so incomprehensible. Embedding links to electronic versions of textbooks can reduce criticism and can be achieved wider and deeper understanding of the subject that is taught. Of course, students can independently find different sources on the Internet where they can deepen their knowledge of certain topics but it is better to be directed to start of that process by qualified teachers. Although in the schools different activities are often carried out in small or large groups, learning is an individual process. Sooner or later, every student will decide when he's had enough learning and he will take an exam where his individual knowledge will be assessed. The criteria for a passing grade, respectively, required a minimum level of knowledge may be the same for all students but for better marks could be evaluated ambition and success of students to achieve a broader and deeper understanding of the content of the subject. It will be easier to achieve if the teaching material is fixed not only on the contents of the textbook. Students should be encouraged to use and find new sources of information on teaching content because they will have to do it in the future. Almost any future private, educational, business or political activity of graduated students will include searching and finding new information that will be incorporated into existing systems of personal information and knowledge. Although this article was made on the basis of experience from university teaching all this may be applied in the schools. Textbooks for

primary and secondary schools may also be in electronic form, available at school sites and may contain links to recommended content on other websites

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