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**INTERACTIVE ELECTRONIC TEXTBOOKS –  
ADVANTAGES AND ELABORATION RULES  
IN HIGHER EDUCATIONAL INSTITUTIONS**

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**Abstract:** *Interactive electronic textbooks (IET) are still underestimated in higher education institutions. The purpose of this study is to analyse the main advantages of IET and some of the rules for their elaboration in higher education institutions. To achieve this goal, an IET on "Human Resources Audit" was developed, which provided an opportunity to indicate the advantages of IET over traditional book textbooks and to specify some basic rules for their elaboration. This publication contains part of the results of a study funded by the targeted subsidy for R&D of UNWE under contract NR&DNI-13/2019 on the topic: "Research, elaboration and introduction of innovative methods in the learning process".*

**Keywords:** *interactive electronic textbooks, innovative methods, training*

**INTRODUCTION**

"Modern and up-to-date training is unthinkable without the development of electronic tools. They must be for the benefit of both the teacher and the student" (Karavasileva, J., 2020, p. 39). "The purpose of the materials intended for training in a digital environment is to increase the quality of the visual, sound perception through colour and dynamics. For this purpose, presentations, animations, educational games, videos, electronic textbooks and other multimedia elements are used." (Karavasileva, 2020). IET contain all this.

## **MATERIALS AND METHODS**

There is an understanding that IET are insufficiently in-depth, distract readers with their visual effects and are suitable primarily for children. This is the reason why IET are still underestimated by some teachers in higher education. However, IET found a "path to the heart" for both students and innovative teachers in higher education. The reason for this is the number of advantages of IET over traditional ones. Among the significant advantages is their lower price. Between 2006 and 2016, textbooks used in higher education increased in price by 73% (Senack & Donoghue, 2016). While IET could be acquired at a lower cost than book textbooks.

IET are innovations in training. Their use in the learning process "is a necessity stemming from the needs of today's young people as well as the needs of universities" (Dineva, 2019).

One way to realize the benefits of IET is to understand their nature and to elaborate them competently.

I believe that, in its essence, IET include hyperlinks, clicking on a word in the text and finding a definition of it, usually at the end of the text, and at the same time contains additional interactive features that in addition to enhancing perception, help to make the text easier and faster to learn, facilitate its memorization and reproduction and stimulate interest in reading.

The implementation of the above-mentioned research project includes the elaboration of IET. In the process of elaboration of IET for the discipline "Human Resources Audit" the essential points that should be considered in this process were indicated. These include: the type of software for elaboration of IET (elaboration of your own or buying ready-made); formation of the structure and content of IET; copyright of interactive features.

In the process of research, the well-known scientific methods are used: analysis, synthesis, interview, induction, deduction.

## **RESULTS**

### ***Results related to the advantages of interactive electronic textbooks over traditional book textbooks***

Based on the results obtained from the study, I believe that among the advantages of interactive electronic textbooks over traditional

paper textbooks are: lower purchase price; lower rental price; possibility to purchase individual chapters of the textbook, easier updating of the information in the textbook; shorter time for publishing a textbook with updated content, nature conservation.

Lower purchase price. The price of IET is lower than textbooks. Evidence for this claim can be found on Amazon. The difference in the price of a colour paper textbook always exceeds the price of IET, which is also colourful.

Lower rental price. The rental of IET is done through online access for a certain period of time. In this case, the rental price is lower, because it avoids the postage costs that are inevitable when renting book textbooks.

Opportunities to purchase individual chapters from the textbook. The various IET platforms provide an opportunity to purchase individual chapters of the textbook. Unlike traditional book textbooks, where this is not possible.

Easier updating of learning content. IET are developed in software that allows new content to be added quickly and easily.

Shorter time to publish a textbook with updated content. When updating the IET, it takes minutes for it to be published. Unlike the updated book textbook, which requires reprinting, which involves not only more time but also higher costs.

Nature conservation. Nature conservation. The use of IET will reduce the consumption of paper and the destruction of trees for the purpose of printing book textbooks.

### ***Results related to the basic rules for elaborating interactive electronic textbooks***

As a result of the research related to the elaboration of IET, I believe that the basic rules for elaboration are related to: software with which IET will be developed and the place where they will be published; IET structure; interactive functions in the content of IET; research of students' wishes; copyright of the visual effects used in IET.

Selection of software used for the development of IET and a platform for their publication. Often, the software on offer is open source, but in reality, this is only at first glance. In reality, the software

is open source, but for the individual elements in the textbook (such as an interactive test, etc) licenses must be paid for their use. These licenses are too binding because they have to be renewed every year. And in this regard, some of the platforms for the creation of IET require payment for the service related to reading the textbook.

For example, the amount is one if 10 people have access to the textbook and different if 100 people have access. Sometimes the amount is paid once, but there are cases in which it must be renewed every year. There is also software that require payment for the development of IET, but access is free for users. It is enough to download the application on which the textbook was developed. In this regard, developing your own platform and software for IET for higher education institution or the use of ready-made platforms is a choice that every higher education institution must make. The main rule here is to think about the competitive advantage of the higher education institution.

IET structure. IET, as well as traditional textbooks, must have a certain structure. According to the accepted requirements, usually the content of the textbook includes: introduction, main goals, main part on a specific topic, keywords, questions for self-preparation, used literature. The main rule here is that the texts should be short but meaningful.

Interactive functions in the content of IET. The specific features of IET are associated with a significantly greater presence of visual elements, which for the most part is mobile. In addition, in IET, in connection with the self-preparation of students, tests are applied, which at the time of reading provide an opportunity for automatic completion and assessment of the result. The basic rule here is that interactive features to support the content, not distract it.

Study of students' desire. As mentioned, the structure of any textbook, whether IET or a traditional book textbook, is approximately the same. It is more important when developing IET to study the needs of students, such as what they would like to find in the textbook, what will facilitate the perception of the study material, what they would like to have more (for example, more self-preparation tests, more case studies, gamification, video tutorials and more).

Copyright of the interactive functions used in the textbook. The purest option is for the teacher to develop self-used IET, such as: videos, creating your own photos, Power Point presentations with music and / or voice recording. Of course, this will be possible for teachers who have the necessary resources or for higher education institutions that have a recording studio. There are other opportunities that teachers could use, such as free photos, gifts, animation, music, which can be used when the textbooks that the teacher offers are not sold, but are free.

Another possibility is for the university to purchase various interactive elements and create a library of interactive elements for teachers to use. A third option is for teachers themselves to purchase interactive elements at their own expense and use them in their interactive e-textbooks, again respecting copyright, depending on how they offer their textbooks (free or paid).

## **CONCLUDING REMARKS**

The main conclusions that can be made based on the results of the study are related to: the universal advantages of IET; IET are a source of competitive advantage; IET will influence the choice of potential students; risks of access to interactive electronic textbooks; risks of incompetent development of the interactive electronic textbook.

Universality of the advantages of IET. The presented advantages of IET over traditional book textbooks are universal and apply not only to IET, which are used in higher education, but in the educational process in general (preschool preparation, primary school, secondary school, continuing education).

IET are a source of competitive advantage. The choice that higher education institutions have to make between their own software and a IET platform or the use of ready-made software and platforms must also be related to the competitive advantage. Would higher education institutions want to offer textbooks in formats in which the competition also offers? Of course, this decision will depend on the financial condition of the university, because the creation of a platform, as well as the development of software for IET development, only for a specific higher education institution requires a trained team of computer specialists, programmers with innovative thinking.

Their salaries are usually above the national average. The larger the number of teachers, the more computer specialists will be needed to provide technical support to teachers, which will undoubtedly affect the budget of the higher education institution. It is good to keep in mind that IET will influence potential students to choose a higher education institution. In this sense, IET will be a source of competitive advantage for higher education institutions.

Risks for access to IET. In places where the internet connection is unreliable, students will have difficulty accessing IET.

Risks of incompetent development of IET. Interactive textbooks are useful only when the application of the traditional structure of the textbook and the support of the content of the teaching material with interactive elements are in sync. Disrupting this synchronization by overloading the textbook with interactive elements, some of which may be interesting but not synchronized with the content, will reduce the benefits of the interactive textbook. This means that teachers must be professionally prepared for the development of IET.

Despite the still existing distrust of IET, it can be concluded that given the advantages of IET, they will find increasing application in the educational process of higher education institutions.

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