

## Meanings of the digital textbook

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### Abstract

We showed interest for digital textbook, viewed as a new tool in classrooms by political decision makers. Future generations have a great responsibility: what should they keep for development, what should they give up in order to adopt new practices. In fact, digital textbook is coming to give an exam to all school factors: how to deal with technology challenges. Are we ready to honestly analyse our practices? Is the best way to immediately accept the change or better to be aware of possible losses. Thus, our option for the topic of the research and of the analysis undergone is generated precisely by the stage of construction, assertion and validation of the digital textbook. The concern to identify definitions, constructions and strategies for use by schools in Romania and in other educational systems bears the mark of the interest for the adequate use of the digital tool. The student/teacher relationship is founded on understanding the effects generated by the learning tools and it is fundamental for edifying the personality of the future generations. We believe that the balancing act between the definition outlined by Simion Mehedinți and the current scientific literature on the digital textbook is imperative and original in this area of interest.

*Keywords: digital textbook, interactive tools, new skills, technology challenges, independent learning.*

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Numerous studies employ different terms to define the same conceptual contents: digital textbook, electronic textbook, e- textbook (Choi et al, 2011; Daniel & Woody, 2013; Rockinson –Szapkiw et al. 2013, Weisberg, 2011). We will be using the term digital textbook (DT) constantly, because we have a double-fold support: on one hand, it is the term used by the Minister’s Order 5559/22.11.2013 on their elaboration and publication, and on the other, because we are concerned with the possible meanings ascribed to the term digital and to its understanding in a school context.

In order to define the digital textbook, we will begin with the meaning provided by the classic textbook of Simion Mehedinți (1907-1923): “A good textbook must be brief, namely it must comprise only characteristic data or facts, the acquisition of which must be not only a memorizing act, but also ferment for the thinking process. The textbook must teach students not only to acquire factual data, but also to follow an idea, to meditate on it. By observing and thinking, the student reaches the stage where he operates with the notions and rules acquired and where he solves new problems using them. The use of various forms of exposition – such as the comparison, the practical exercises and indications – provides extra intuition, accessibility and value to a textbook.” Hence, a textbook is an important component in learning, a resource-tool, which allows students to become committed and involved. On the other hand, in the context of using a traditional textbook, according to Freire (1996), the student is a passive receptor, who does not control the knowledge; he goes on describing this situation as a model of banking services, “in which the students are depositories and the teacher is the depositor” (p. 53). Naturally, despite the general critiques or those for a specific textbook or for various school subjects, textbooks have been used for a long time to improve the teaching process for many subjects, on all schooling levels. It is worth noting here the definition provided by Nose (2003), according to

whom the school textbook is “A textbook is a book that has been designed specifically for the needs of school education. It is a guide toward other sources of knowledge, toward discovering new knowledge.” (p.31)

The role and meanings of textbooks change permanently, thus reflecting to the same extent the transformations with effects on the entire educational system. A textbook is also frequently analyzed in terms of the logical and mental activities determined among students (Sikorova, 2011):

Perception: reception of information;

Application: adequate use of knowledge;

Searching: activities based on orientation in the text, on finding new information;

Interpretation: activities based on text analysis and interpretation;

Problem solving: solving tasks with a heuristic basis.

Covering these stages requires the student to get involved, to be trained; he is no longer a mere passive receptor, but he becomes active in the educational, self-formative process. Thus, a textbook contains the most important competences that students are going to acquire through the scheduled curriculum, including logically systematized lessons (Laketa, 2015). In this paper, we wish to find out if the digital textbook meets these particular requirements, if it is presented this way, as well as to what extent it includes these new characteristics and functions.

In agreement with Chesser (Chesser, 2011), we note that the idea and the elements of digital textbooks are based on the emergence and development of CDs, in mid-1990, as an initiative of editors meant to deliver the digital versions of printed materials and, in some cases, a richer multimedia content. The purpose was to make their printable products more competitive and more important, among the resources used for supporting the frequent activities of teachers. Concerning the new opportunities, they became adequate “to be printed out by the instructor as needed” (Chesser, 2011). Consequently, the first digital textbooks could only be electronic versions of the printed textbook. The steps covered make the current textbooks more than a simple image of the classic textbook.

The digital textbook is already understood as a whole, a digital item that contains an electronic representation of an instrument with a textbook role, being often seen as the analogue of a printed textbook. According to most definitions, a digital textbook is seen as the main material for students, because it combines the traditional textbook, the notebooks, vocabularies with multimedia functions (video, animations, virtual reality) that determine an interactive and individualized learning, regardless of time and space (MEST, 2011). Moorefield – Lang (2013) considers that the digital textbook is “an e-textbook is a book that is instructionally or educationally based and is provided in a digital format” (p. 13). To these observations, we add the distinction between the printed tool and the new one, in the sense that, while the traditional textbook provides knowledge from one direction – those starting from the teacher to the student –, the digital textbook encourages the participation of students to the acquisition of knowledge by exploiting the multimedia functions, by continually improving the problem-solving skills of students (Yang et al., 2010). Furthermore, Constantin Cucuș highlights that “the digital textbook should not be understood as a double or as a substitute of the real, printed textbook, but it represents a different product constructed on the basis of new principles for explaining the subject, after rendering the contents more didactic-oriented and adapted to a philosophy of learning that potentates activism, interactivity, progressivism, creativity.”

Anyway, the definitions of the digital textbook are often modified, being influenced by both the development rhythm of the technologies in this field and their rapid progress (Jung & Lim, 2009), and by the conditionings specific to the social-political organization forms. Regardless of how free a textbook becomes in its evolution – dictated by the requests of the historical eras, by the evolution of technologies, by the expectations of the actors within the process, by the more or less inspired decisions of the decision factors –, its basic objectives, tasks and functions remain unaltered.

In a reprisal of the analysis, in the following chapters, we are going to observe the way each of the twelve defining elements of a textbook listed by Simion Mehedinți preserves its validity, and to these we add new tasks, always different and current, for the authors of the digital format. The novelty is provided by the means and forms in which

they can favour the attainment of the goal, bearing the mark of the development stage of the civilization, of the dissemination and use of the new cultural products, as well as of the extent of people's investment in their attainment.

In agreement with our commitment to talking about the functions, roles and possibilities of new learning instruments, we will focus first on the extent to which such a textbook may meet the requirements listed in the description provided by S. Mehedinți:

1) To be brief

Is the digital form capable of meeting this condition? The first answer could definitely be negative. Too many are the sources towards which any topic we choose for the approach, any word or expression introduced in a program with such destinations could direct it. In contrast to the classic textbook, especially designed to get the student away from any other sources, the new one brings along the lack of limitations, the multi-applicable rules of browsing. Nonetheless, even if S. Mehedinți himself eliminated the first condition, the current organization rigours of learning contents, the time of learning – as a measurement unit of the real possibilities of the student and of the teacher –, as well as the imperatives of logical coherence do not annul the first requirement: To be brief!

Difficulties start arising at this point: on one hand, those imposed by free circulation – translated by anyone's access to all the sources; on the other hand, by the imperious need to respect the development particularities of the students – by grades, education cycles. We only pinpoint that, now more than over, the solution will not come solely from the teaching staff and from the traditional specialists within the system, but also from the real common commitment of digitization specialists along with those who defend the schools, futurologists and other professional categories. Nonetheless, the digital textbook can be brief. The condition is ensured by its capacity of limiting to one definition, one exercise, to no more than what is necessary to be efficient. Furthermore, we believe it is necessary to be concerned with creating textbook auxiliaries, designed with the possibilities of the new technologies and in an adequate form.

2) Only characteristic data and facts

The main propositions within the new tool consist in a multitude of choices and versions that put students in a paradoxical situation: on one hand, all the information presented to them is specific, of a great importance, and on the other, they reach a saturation of the information. Hence, should not the most important aspect of a textbook be critical thinking, certain discernment, should not there be a certain limit in the selection of the information proposed by teachers to the educable people? Or should the beneficiary/student decide which information is necessary to him throughout that lesson? In this case, we reiterate an old issue of humanity regarding free will and the value of freedom in the learning act of the one who does not have the science or the selection criteria. While respecting the principles of a philosophy of veritable education, we posit that the ideal *modus operandi* with the digital textbook imposes the moderation and precaution of the experts in education sciences, the only ones capable of stimulating the role of interdisciplinary teams.

3) More than a memorizing act

The mechanization of the learning act, especially following the industrial revolution, and the focus on information to the detriment of knowledge create a profile with a dehumanizing potential for modern man. For the new tool that has been imposing in the sphere of education, the aim is to surpass a problematic level in the training of young generations. By using the new means, which can analyze, compare, determine and evaluate the notions received, the pedagogical act is no longer a mere memorizing act, but one that forms competences adapted to contemporaneity. In the section above, the dominant idea was that pre-university students and university students can no longer count on memorizing and on acquiring all the notions; on the contrary, in the context of the new means, these very tools must serve the acquiring of new skills and behaviours. It may be stated that the new textbooks will provide favourable conditions in this respect – actually, S. Mehedinți expressed the same desideratum.

4) Ferment for thought

We wonder whether the opportunities provided by the new learning tool will stimulate the curiosity of users, namely whether the users can go beyond the information this tool offers. Our question is motivated by the fact that, indeed, easiness and accessibility lead to the mental and implicative convenience of those who have contact with the

data presented by the digital textbook, which announces an issue difficult to manage in terms of motivational resources: going beyond the superficial layer of the facts. In this context, those who propose the digital textbook will have to respond to students' need to be challenged, to have their contemplation capacity stimulated, to be provided with reasons for a better insight into the surrounding realities. We can imagine a significantly broader field of simultaneous action upon any form of the digital textbook. By using such a textbook, teachers, students and other training actors intervene directly in its rewriting.

5) To follow an idea

In the perspective of conceptualizations resized on the needs of modern world, a project (the digital textbook) was crystallized whose primary aim was to provide immediate access to information. However, the digital textbook – by attaching preset hyperlinks, carefully selected and ideological positioned multimedia resources – focuses of consolidating among students certain ideas meant to situate them in one perspective or another, to provide them with a broader setting for understanding certain aspects. In this setting, a digital textbook is required to actually separate completely from the classic one.

6) To meditate on it

The course of a piece of information until it is acknowledged, interiorized and capable of producing new ideas has become one of the imperatives on which the educational act is based. The road of knowledge passes through the fields of meditation. The natural aspect of learning will find its catalyser in the digital textbook, as long as the latter proposes from the start to orient the students towards a contemplation of the data presented. The objective can be attained in various ways: from the presentation of as many sources and versions as possible to the critical analysis of each argument.

7) To operate with the notions and rules acquired

One of the great promises of the digital textbook consists in the fact that students need to set themselves away from the written text. It fulfils the promise made if it acts as a mediator between an acquired and a new piece of knowledge, through the access to multiple forms of presenting information. We refer mostly to the use of video clips, of images and of audio resources. From this point of view, the characteristic provided by S. Mehedinti is applicable to the digital textbook. In fact, the imperative announced by the great pedagogue becomes a condition of understanding, of using the concepts and principles presented through the textbook.

8) To solve new problems

The modern textbook is designed for the student to face old problems in new forms and to provide their rearrangement in the perspective of an immediate solution. The proximal response solicited and the permanent need for feedback now places the student in a privileged position in the act of learning. The student is now provided with the possibility of identifying ways to use everything he has always to a greater extent and in a better way.

9) To use various forms of exposition, such as the comparison

The similarities and the contrasts found in digital materials represent a pillar in developing a student's capacity of situating diametrically opposite data in an efficient and thorough manner. Various dictionaries – used as tools through which a student was taught to increase his understanding, analysis and sources – acquire more importance through the possibilities of the new technologies, capable of selecting and ordering information on their own.

10) To use the practical exercises or indications

The use of the information accessed through the new textbook acquires new valences through the amplification of the activity in virtual socialization spaces. From this point of view, the proximal effect can be observed in the fact that students may establish a connection bridge between the information discovered in school and those in reality. Students manage to see the application of ideas easier than by using a classic textbook. Thus, by attaching relevant video clips or other multimedia resources, by the offers of the virtual space, much stronger levers towards reality are constructed, and the possibilities of the digital textbook become unlimited. A digital textbook can be used to simulate anything; it

can be modified in any way; the information is suggested and oriented by the teacher's power and the student's understanding.

#### 11) Extra intuition

The adjustment of cumulated information to the requests of the curriculum, but also to personal options, mostly using the previously made comparisons, places students in a varied system of relations between theory and practice. Due to this fact, the new technologies become useful and usable for students. Nothing is memorized; nothing is acquired without also sensing something beyond what was received. All will depend on the student's motivations, amplified by the teacher.

#### 12) Increased accessibility

The overall image that students obtain using the digital textbook – focusing on context, selection and interpretation – is that access to knowledge is easy and instantaneous. This represents a significant disjunction from the possibilities of the classic textbook. A digital textbook manages to preserve – to a certain extent – the previously assimilated data and to reproduce them in a varied, new way, in such a way that the student becomes attracted by knowledge and rebuild the road whenever a topic of interest arises. Accessibility is also ensured and enhanced by the opportunities of selection of the sources, ordered by certain criteria.

#### 13) Increased value

The “added” value that the student feels – from the first uses of the digital learning tools – consists in the exploitation of the multiple resources in real time. Furthermore, the varied multi-/pluri- and interdisciplinary information presented forces both the teacher and the student to be in an epistemic dynamic that leads to cultural and educational progress. The increased value of the textbook is provided precisely by the characteristics listed. To those, we add the value of the user, capable of always increasing the contribution as a teacher, a student or an author.

### Conclusion

All these features helped us to design a comparison table (*Table 1*), so an efficient textbook is the one oriented towards the future, capable of making it easier to solve new problems, according to the definition provided by S. Mehedinți. The request is the same for the digital textbook, compulsorily designed to support the independent learning of students, including learning advice, notebooks, dictionaries, functions for individual work, in order to complete the traditional textbook. Whereas the classic printed textbook involved “annexes” and external tools in order to accomplish the role of all the elements of a minimal library of the student, this task is reprised by the digital version. One of the tasks assumed by the research initiated in schools – with the help of teachers, of the school principal, of the IT specialists – is also the production of new auxiliaries, which constitutes a premiere, imposed by the use of the digital textbook. The new form of all the materials provided to schools can fit the skills and expectations of the digital natives, because they are accustomed to the virtual setting even since their early childhood (Jang S., 2014). The digital textbooks, unlike the classic ones, come with interactive functions designed to help the students learn according to their aptitudes, skills and their cognitive and socio-affective level (an idea also presented in the definition stated by S. Mehedinți); thus, it meets the demand of providing increased accessibility to both the sources and the presentation

forms. The underline is all the more important in this period, when a part of the current digital textbooks still reflects only the contents of printed textbooks, and it is the task of the future ones to include these potentialities.

Table 1. Features of S. Mehedinți textbook versus features of digital textbook.

Simion Mehedinți Textbook _1930	Digital Textbook
Brief	Limitation at one definition including other information in hyperlinks;
Only characteristic data and facts	Improve capacity of selection;
Solve new problems	Face old problems in new forms;
Various forms of exposition	Unlimited ways of presentation;
Practical exercises	Various ways to simulate the reality;
Extra intuition	Personal option of learning;
Increase accessibility	Easy and instant access to knowledge;
Increased value	Multiple resources in real time;

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