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PRIMARY SCHOOL TEACHERS' OPINION ON DIGITAL TEXTBOOKS

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Abstract: Ministry of Education, Research, Youth and Sports of Romania through order no. 3654/29.03.2012 approved the Framework Plan for Primary Education, Preparatory Grade, First and Second Grades. New subjects and syllabuses were introduced. In 2014-2015 school year appeared new school textbooks for first and second grade. Unlike the previous textbooks new ones are made not only printed but also in digital format. After 6 months of introducing digital textbooks in Romania, it is necessary to identify teachers' opinion regarding these curricular materials. For this purpose, we conducted an online questionnaire. Based on teachers' answers in this article we made an analysis of teachers' opinion on the issue of digital textbooks, we have identified certain needs of teachers and we drafted some recommendations.

Key words: primary education, digital textbook, Romania

1. Introduction

The great majority of European countries recommend or suggest several innovative pedagogical approaches that may be effectively enhanced through the use of ICT with the aim to increase students' engagement and improve their results (EACEA P9 Eurydice, 2011, *Key Data on Learning and Innovation through ICT at School in Europe*).

Coming to align to these European trends, the Ministry of Education, Research, Youth and Sports of Romania through order no. 3654/29.03.2012 approved the Framework Plan for Primary Education, Preparatory Grade, First and Second Grades. New subjects and syllabuses were introduced. In 2014-2015 school year appeared new school textbooks for first and second grade. Unlike the previous textbooks new ones are made not only printed but also in digital format.

In a study that preceded the introduction of digital textbooks, Manasia, Pârvan & Paraschiveanu (2013) investigated to what extend this educational policy (the introduction of digital textbooks) has the potential to become a successful instructional practice. The study conclussions shows teachers' reluctance because they are not yet familiar and trained enough to effectively integrate digital textbooks in teaching. These findings confirm other international findings (Greenfield, 2013) according to which Students, Professors Still Not Yet Ready for Digital Textbooks.

After 6 months of introducing digital textbooks in Romania, it is necessary to identify teachers' opinion regarding these curricular materials. For this purpose, we conducted an online questionnaire. Based on a questionnaire developed by Lalău (2014) we designed an online questionnaire adapted to the new issue, that of digital textbooks. Some items were taken by, while new ones were conceived. Based on teachers' answers in this article we made an analysis of teachers' opinion on the issue of digital textbooks, we have identified certain needs of teachers and we drafted some recommendations in this direction.

2. Digital textbooks

A textbook is *an official document of education policy that ensures the program realization in a form that relate to the knowledge and skills at the systemic level, through various teaching units, operationalized in specifically structured chapters, subchapters, lessons, learning sequences* (Cristea, 2004, p.300). The textbook can be presented as a *typewritten study book, xeroprinted, lithographed or*

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printed for each educational discipline (Bontaş, 2007, p.118). Digital textbooks (Tatum, 2016) refer to *electronic versions of a traditional print textbook that are used in schools or colleges*. In addition to the normal features found in a conventional textbook, the digital textbook often provides additional audio and video resources to help the reader assimilate the information contained in the text. While digital textbooks have been around since the 1990's, technological advances since that time have made the option of using digital textbooks more attractive than ever.

Psycho-pedagogical literature presents textbooks' functions. Some of these functions are: informative, formative, stimulative, of guidance, of organization and self-education (Nicola 2003, p.438; Seguin, 1989, p. 22-24 quote by Cucos, 2002, p.245). In order to perform these functions, textbooks must comply with some scientific, psycho-pedagogical, hygienic, aesthetical, even economic requirements, as mentioned in specialty papers (Radu & Ezechil, 2006, p.94; Jinga & Istrate, 2001, p.215; Dumitriu & Dumitriu, 2003, p.266-267, Pop-Păcurar &Ciascai, 2010). Cucoş (2006), presents the evaluation criteria of a digital curriculum product, namely: relevance of content and methodology; transparency with respect to clarity: of the goals, of the formulation of the results the student will obtain, of the presentation, of the methodological principles; validity; attractiveness; flexibility; openness; participation and socialization.

Digital textbooks were developed based on the requirements set by the National Assessment and Examination Center of Ministry of National Education and Scientific Research of Romania, through the Tender Book for first and second grades textbooks (2013). These must exist in print, digital and online versions. Digital version should be similar to the printed version by respecting scientific content, order of themes and graphic style. The digital textbooks includes full print textbooks content and in addition (or in place of printed illustrations) specific elements such as interactive exercises, educational games, animated movies and simulations that bring an additional cognitive profit. Textbooks are used in teaching – learning – evaluation process both individually and in group activities.

According to the Tender Book the most important interactive multimedia learning activities a digital manual must contain are:

- *Static* having a low degree of interactivity: drawings, photos, etc. These must be present in digital textbook in number of at least 90;
- *Animated* that include animations and animated films on which the student has limited control by sequencing running Play, Stop and Pause. These must be present in digital textbook in number of at least 60;
- *Interactive*, which include educational elements with a high degree of interactivity - simulations, problem solving, educational games etc. These must be present in digital textbook in number of at least 30;
- *Complex* that additionally offers from a conceptual perspective a continuity of accumulation / competences acquired by the student for the entire duration of use. It is not specified the number of such applications which a digital textbook must contain.

Referring to digital elements the Tender book specifies as a prior criterion "the functionality of multimedia elements from digital version". Also through technical criteria are assessed the quality of multimedia elements. For example, the VIth criterion evaluates the "Quality of editing and the facility use of digital version" and the VIIth criterion refers to "The style, unity of textbook and pedagogical quality of multimedia interactive learning activities."

3. Research method, results and discussions

3.1. Period of research

The research was carried out from May to June 2015, after 6 months since appearance and implementation of digital textbooks in schools.

3.2. Sample of respondents

The sample of subjects consisted of 58 primary school teachers who teach in both rural areas (41.4%) and urban (58.6%). 97% of them are female and the remaining 3% are male. Respondents covered an extensive territorial area (Transylvania and Moldavia).

Respondents were aged between 21-59 years. 8.6% of them have completed High-school, 53.4% of them have a Bachelor's degree while 37.9% have a Master's degree.

In terms of teaching experience, 20% have under 5 years of teaching experience, 11% between 5-10 years, 7% between 10-15 years, 36% between 15-20 years, 19 % between 20-30 years and category between 30-40 years category represents 7%. Regarding the training 10.3% are debutants, 19% are definitive teachers, 13.8% have the second degree, while 56.9% have the first degree.

3.3. Procedure

The survey is based on a questionnaire developed by Google Forms, which was sent and completed online. Respondents answered voluntarily and anonymously.

3.4. Survey content

For our study, 10 items of questionnaire were selected. Nine of them are multiple-choice questions, while the last one require completing the response (see Annex). The questions referred to the adequacy of contents, suggested activities, the language used, illustrations etc. In addition, we were interested teachers opinion on the textbooks' novelties. On the one hand the integration of Mathematics with Environmental Exploration, on the other the digital aspects of textbooks. The questionnaire has an introduction, referring to the area where respondents teach, teaching experience, their studies and teaching degrees.

3.5. Results and discussions

Digital textbooks were chosen in a very high percentage of 86% by school staff while 9% of teachers having the opportunity to choose it themselves. Only 5% of books have been imposed. An observation is necessary namely the textbooks once chosen, there is no possibility for next generations of their change.

In Figure 1 is centralized the situation of responses received from teachers for questions from 2 to 9.

Analyzing the collected data, we find that in the view of almost 65% of teachers, new textbooks cover much or totally the syllabuses, while 97% of them consider that the syllabuses are covered at least at an average level. We see different views of teachers in this matter. We believe this is due to ambiguities that they have in terms of syllabuses due to their introduction without being accompanied by methodological guides. However, the answers are in agreement with those obtained by Lalău (2013) for traditional textbooks.

Almost all teachers (97%) consider activities and illustrations at least average adequate for students. 91% and respectively, 88% of teachers think that the scientific content, respectively the language used, of textbook is generally appropriate of students' age level. Regarding the evaluation, only 40% of teachers believe that textbooks facilitate it much or totally, while at the opposite side 15% of them consider that evaluation is facilitated very little.

An analysis of answers presented in Figure 1 indicates differences on two categories of issues concerned with reference to the manual: traditional aspects respectively the novelties.

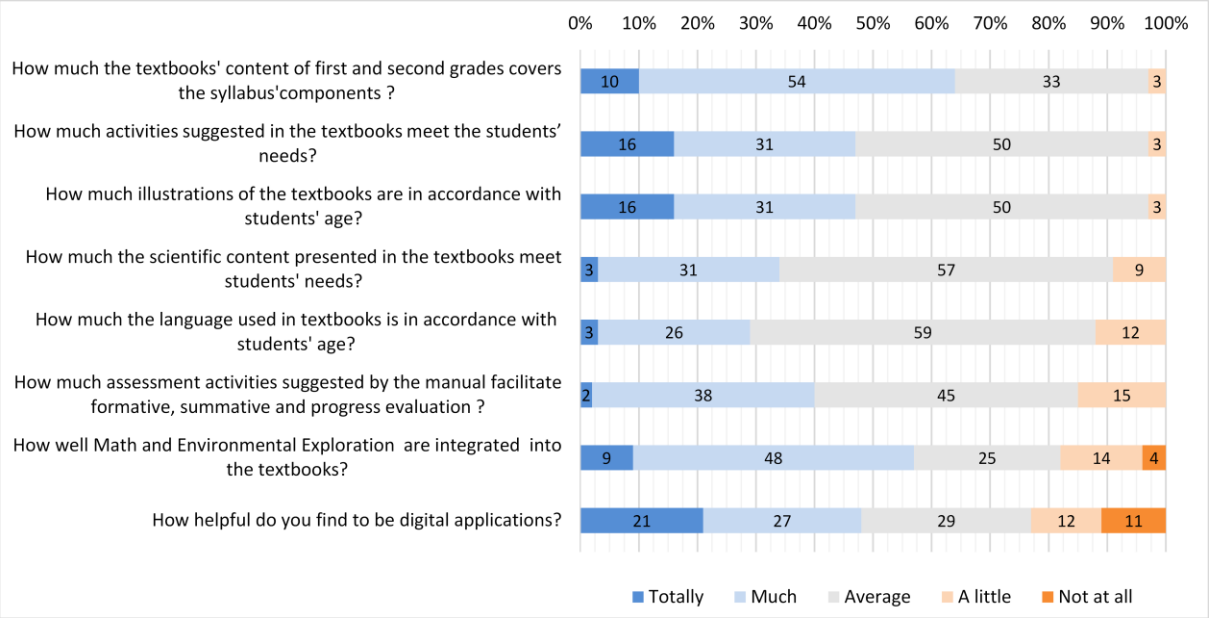

Figure 1. *Teachers' opinion on digital textbooks*

To the questions from 2 to 7, which refer to aspects of traditional textbooks, teachers have only selected the first four possible answers. Most of the answers are situated in "Much" and "Average" areas, where are found between 81-88% of total responses. "Average" response was selected to questions from 3 to 7 by about half of teachers (between 45% and 59%). This choice is a convenient option for those who do not have a firm opinion either positively or negatively. We believe that in this area there are so many answers because at the moment when the questionnaire was administered, teachers were not entirely familiar with new textbooks and / or have paid more attention to the textbooks' novelties.

At the last two items, the views of teachers polarizes at two extremes, on the one hand "Totally" and "Much", on the other hand "A little" and "Not at all". They are the only questions where the answer "Not at all" was selected. "Average" area for these questions is less represented. This shows the teachers' interest in these curricular novelties and strong opinions that most of teachers have about them.

In terms of integrating the Mathematics and Environmental Exploration, 57% of teachers believe it is well or very well done, while 18% of them believe that it is made a little or not at all well. On the usefulness of digital contents, 48% of teachers consider them much or totally useful, while 23% of them consider them little or no useful. We believe these point of views are influenced by personal experience of each teacher due to a lack of formal training on the implementation of digital textbooks. We also believe that their opinions are influenced by the area where the school is located, technical school equipment and by students' technical possibilities. Besides the views expressed, at the last question participants justify these opinions.

For a more detailed analysis of the data obtained, we made a quantification of scale in points, as follows: "Totally" - 10 p .; "Much" - 7.5 p .; "Average" - 5 p .; "A little" - 2.5 p. and "Not at all" - 0 p. By doing so we could determine a score for each item (see Table 1).

Tabel 1. *Scores achieved on each item*

Item	Score
How much the textbooks' content presented of first and second grades covers the syllabus' components?	6.77
How much activities suggested into the textbooks meet the students' needs?	6.50
How much illustrations of the textbooks are in accordance with students' age?	6.50
How much the scientific content presented in the textbooks meet the students' needs?	5.70
How much the language used in textbooks is in accordance with students' age?	5.50
How much assessment activities suggested by the manual facilitate formative, summative and progress evaluation?	5.67
How well Math and Environmental Exploration are integrated into the textbooks?	6.10
How helpful do you find to be digital applications?	5.87
Average	**6.07**

The highest scores and hence most valued components of textbooks are consistent with syllabuses, proposed activities and illustrations. The language used in textbooks, the way that activities facilitates evaluation and usefulness of digital content, obtained higher average scores. The average score of 6.07 points out of 10 points is due to high percent that "Average" version received.

At the last item respondents had to explain how they use digital textbooks applications to students. Out of the 58 respondents answered only 41, so 70.6% of them.

Of the responses received on how to use digital applications we list:

- Frontal presentation using a video projector or laptop (8 responses);

- Home use by some students (those who have computer) (6 responses);

- Use into the multimedia cabinet (3 replies) by specifying that it is hardly possible;

- Non-use of digital applications either because there not the necessary technical equipment (5 responses), or because teachers think that digital applications are not beneficial for students (2 answers).

Some teachers do not explain how they use digital applications but describe them, and presents their positive and negative aspects and those of use. We can identify several issues that underlie the teachers' responses namely teachers insufficient knowledge of using ICT, they have not been trained in the use of digital textbooks but also insufficient technical equipment of many schools.

Here are some comments made by teachers:

- About introducing digital textbooks:

"It would be ideal for us to use digital applications, with students, but Romania is not technicaly ready yet for this. In Romania first appear measures and then the question whether these measures can be applied. "

- About the technical equipment of schools:

"I have my own notebook, and the school with 600 pupils has 3 functional projectors and only 12 computers in a cabinet. I managed to use once digital applications. Children enjoyed it very much, have solved, one at a time, additon and subtraction exercisces and barely waited the application's feedback. They were more aware of the new concepts presented in audio format."

"Using digital applications needs support: computer, projector, printer, projection screen, interactive whiteboard and computers / tablets for students to work alone. Otherwise they have been created in vain. Our class does not have it. I can not use classroom CDs ".

"There isn't equipment in every classroom, I cannot take my personal laptop to school every day and the screen is too small for all students to view. The internet connection is achieved rare by technical reasons.. It was decided that CDs will not be given to students because are on inventory "

- About the ways of using digital applications:

"In classrooms where each student has access to a computer, the digital applications are very useful for students. They retain information more easily, and visualize more attention."

"Use on the classroom computer, seated in a prominent place for all students. Students are from rural areas and do not all have the opportunity to work with CDs at home because they have no computer. "

" Digital applications are generally used by students at home. Punctual at school we talk about the problems faced by students and together we find solutions. However most students don't have basic computer knowledge, therefore they have difficulties to access the applications. "

- About the quality of digital applications:

"The exercises only few applications. I expected to find digital games, attractive exercises, other than what is working on the textbooks."

"Digital applications are very useful for students because they grow up in the age of technology. Applications should be more interactive, following the example of activities already developed on the SmartBoard English. "

The research conducted has some limitations as follows. The sample of teachers has not been representative. At the moment when the questionnaire was distributed not all teachers were informed / familiar with the new digital textbooks. Teachers don't have followed a training program on integrating digital textbooks in teaching. We don't know digital competences of surveyed teachers .

4. Conclusions and Recommendations

Research theme has been one of interest for teachers, as evidenced by the large number of respondents, their zonal distribution and teaching experience.

The results of this research show primarily that most teachers are not yet ready for digital textbooks. This finding confirms other research conducted at national level (Manasia, Pârvan & Paraschiveanu, 2013) but also internationally (Greenfield, 2013). Also in this study identified teachers' perception on digital textbooks, both in terms of structuring content, proposed activities, appearance, the language used and also regarding digital applications. It was signaled teachers' need to have access at better technical facilities, to receive a general ICT training and in particular on using digital textbooks.

A further direction of the research is to collect new data on digital textbooks after a few years since their implementation on several aspects as: the ways of their using into the educational process, the knowledge of students who have used CDs compared to those who don't use, interdisciplinary knowledge of students, etc.

We can formulate some recommendations that meet teachers' needs. To familiarize teachers with the specificity of digital textbooks would be beneficial to organize following categories of activities:

- Open lessons (face to face or online);

- Discussions, methodical activities for teachers, training programs on this subject;

- Informational materials and concrete models for teachers on the use of digital textbooks in teaching. Schools, County School Inspectorates and profile Faculties should work together for an efficient using of these resources in school practice, both by teachers, students and by parents.

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Annex: Questionnaire for primary school teachers

Gender: Female /Male

Age: …..

Nationality: romanian/ other

Teaching experience: under 3 years / 3-5 years / 5-10 years/ 10-15 years/ 15-20 years/ 20-30 years/ 30-40 years/ over 40 years

Didactical grade: debutant/ definitive teacher/ IInd grade/ Ist grade

Latest studies completed: Pedagogical high school/ Post-secondary school/ Bachelor's degree / Master's degree / Ph.D.

The area where your school is: urban/rural

At next question, choose only one answer:

1. How did you choose digital textbooks?
    - I chose myself
    - By school staff
    - Have been imposed

At questions from 2 to 9 select an answer from the scale of five values:

- Totally
- Much
- Average
- A little
- Not at all

2. How much the textbooks' content presented of first and second grades covers the syllabus' components?
3. How much activities suggested into the textbooks meet the students' needs?
4. How much illustrations of the textbooks are in accordance with students' age?
5. How much the scientific content presented in the textbooks meet the students' needs?
6. How much the language used in textbooks is in accordance with students' age?
7. How much assessment activities suggested by the manual facilitate formative, summative and progress evaluation?
8. How well Math and Environmental Exploration are integrated into the textbooks?
9. How helpful do you find to be digital applications?

At question 10 detailed your answer:

How do you use digital applications with students?

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