

# Role and configuration of digital textbook for musical education from the perspective of initial training for primary school teachers

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## Abstract

*The authors of present article highlight and analyze some useful aspects of the of digital textbook for musical education's process of developing and implementing on the computer from the perspective of the initial training of the primary school teachers in the university system in the Republic of Moldova.*

**Keywords:** Digital textbook (DT), interactive educational activities, configuration of of DT for musical education

## 1 Introduction to the DT concept for musical education

One of the basic factors in initial teacher education for primary school teachers is their training in the art of modeling pupils from a multilateral perspective. Among the components of this desideratum are the musical education of young schoolchildren. Pupils' education through mc is a topic of permanent relevance and, in this context, the role and configuration of a digital textbook (DT) for musical education gains importance and arouses a particular interest, being in the list of priorities of teachers Integrated into educational activity at this level of education, software developers, parents and, last but not least, potential users of DT, the pupils.

The didactics of musical education is a compulsory discipline in the initial academic training of primary school teachers, being included in the study programs at all university level institutions accredited in the professional training of this type of specialists. Thus are the faculties of Education and Psychology from different countries of the world, such as: **(1) Norway:** OSLO - Faculty of Educational Sciences, etc.; **(2) Lithuania:** Vilnius - Lithuanian University of Educational Sciences, etc.; **(3) Switzerland:** University of Friborg with its master's programs in the Educational Sciences (EDUCATIONAL SCIENCES) profile, surnamed on the homepage of this institute, EDUCATION, PSYCHOLOGY, PSYCHOLOGY; **(4) Finland:** University of Helsinki - Faculty of Educational Sciences, etc.; **(5) France:** University of Strasbourg - Faculty of Education Studies, etc.; **(6) Canada:** Memorial University of Newfoundland - Faculty of Education, etc.; **(7) Romania:** Cluj-Napoca - Faculty of Psychology and Education Sciences; Sighet - Faculty of Psychology and Education Sciences; Nasaud - Faculty of Psychology and Education Sciences; Târgu-Mureş - Faculty of Psychology and Education Sciences; Sibiu - Faculty of Psychology and Education Sciences, etc.; **(8) Republic of Moldova:** "Ion Creangă" State Pedagogic University of Chisinau - Faculty of Education Science and Informatics and Faculty of Psychology and Special Psychopedagogy; State University of Moldova - Faculty of Psychology and Education Sciences; Free University of Moldova

- Faculty of Psychology, Education and Social Assistance; State University "Alecu Russo" from Balti
- Faculty of Sciences of Education, Psychology and Arts, etc.

## **2 The role of musical DT into initial university education of primary school's teachers**

The curriculum of the Musical Education Didactic / Musical Education Methodology of the majority of the institutions listed above focuses on two main directions. The first refers to basic musical notions such as *sound and its graphic representation, including duration and intensity, range, metric and its elements, sound system, etc.* The second main direction of the course focuses on the practice of teaching the subject, beginning with the general notions, on the importance of music and musical education in the development of the child, then going to the applicative part regarding the systematic way of conceiving the lesson, methods and procedures. Specific teaching, the specialized exercises imposed by the specifics of the subject matter, the pupil's integration into collective social and musical activities such as the choir and the instrumental ensembles and finally the general and specific assessment methods and strategies (Margarita Tetelea & Viorica Crişciuc, 2015).

Through this dual structure, both the subject itself and the DT of the given discipline must provide to the students, prospective teachers in primary school, and through their training to the pupils, in addition of the specialist knowledge musical theory about, also the ability to perform various types of musical exercises, such as:

- *Systematic exercises based on framework objectives as well as;*
- *Systematic exercises based on general competences and units of learning;*
- *Various types of musical games with teaching orientation;*
- *Techniques to stimulate imagination, small-school creativity;*
- *Moral and musical education strategies, etc.*

The entire set of teaching activities enumerated above to be incorporated into a program product such as a DT for musical education in turn must be designed not only methodologically, but also informatics and algorithmic for it be able to be implemented on computer in an interactive, flexible, and reliable way.

And the application of the appropriate teaching-learning-assessment methods to the competences acquired by the undergraduate students in the study of the notions related to the primary-school musical education is relevant only taking into account the specificity of the cognitive development of the pupils in the given classes, a fact obligatory to be elaborated and implemented in an informatics algorithm mechanism that is impeccably functional on the level of the didactic scenario of a DT for Musical Education.

## **3 Configuration aspects of DT for musical education into initial training for primary school teachers**

In the Republic of Moldova (RM) in 2015 have been proposed the concept of the digital manual. In the compartment, several objectives have been declared for the purpose of developing and implementing the digital textbooks (DT) of the given document. One of the central ideas in the above-mentioned conception is that the process of developing and implementing of the DT is meant to bring with it "[...] the modernization of the computer tools for pupils and teachers [...]" (Burlacu Natalia & Balmuş Nicolae, 2016), and the move towards a digital information environment is expected to be "... favorable and friendly ..." able to "[...] ensure the delivery of quality education" (Burlacu Natalia & Balmuş Nicolae, 2016).

The commitment to ensure the digital information environment in the educational system in the Republic of Moldova is assumed by the Center for Information and Communication Technologies in Education (CTICE) of the Republic of Moldova, on the official website of which can be

downloaded in the format \*.pdf, absolutely free any set of school textbooks, for any step and discipline existing in native pre-university education.

The truth, with which we agree, is that both programmers and teachers in the education system from our country and from abroad have the opinion that the scanned manuals in \*.pdf are not those digital textbooks about which it is spoken so much, especially that in the fundamental document defining the DT's concept (Burlacu Natalia & Balmuş Nicolae, 2016) reflects the objective which states that: "Another goal of the development and implementation of digital textbooks is to ensure that all actors of the educational system have access to the most extensive volume of modern, interactive digital educational content **presented in various formats, professionally developed according** to the didactic, psychological, informatics and design standards; adaptable to the needs of each learner" (Burlacu Natalia & Balmuş Nicolae, 2016).

Program developers and IT specialists understand that an appropriate DT that is consistent with the stated concept is not easy to elaborate at all, and that an scanned ordinary \*.pdf will never transform a traditional manual into a digital one.

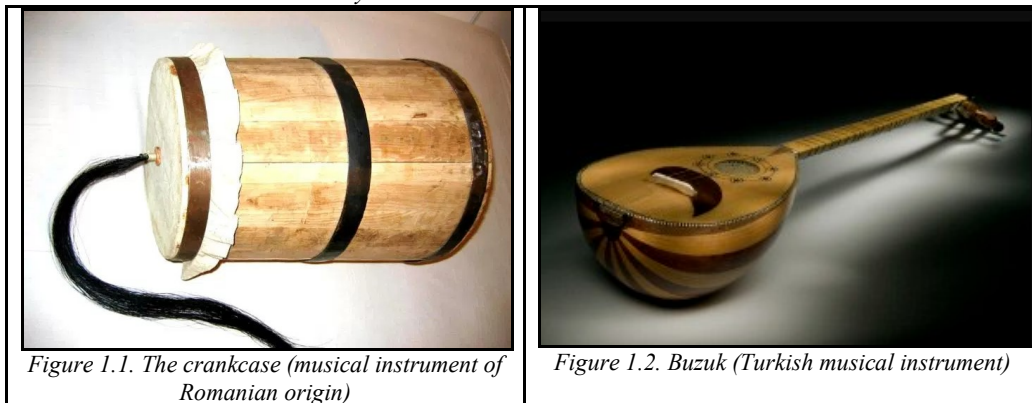
Thus, this group of authors-developers DT for musical education, has based on the printed manual, has completed the existing learning activities in traditional didactics with multi- and interactive multimedia activities, as envisaged in the draft DT concept issued in Chisinau. The DT version, being designed and developed by us in the Borland Delphi environment, really provides both learners and teachers with a wider variety of interactive educational content. Because, traditionally, in teaching, the schoolmaster resorts to the induction or deductive demonstration and / or argumentation of the lesson's subject, using of didactical means is an imperative of the educational process, in general.

Thus, it is compulsory that DT, which completes and / or accompanies the lesson's approach, is also a provider of educational resources correctly designed from the point of view of modern didactics.

In particular, DT of Musical Education must contain various categories of educational resources (which the authors have included in the beta version of given DT), such as:

- Voice songs for voice assemblies, the interpretation of which is focused only on the melodic virtuosity formula in vocal scores;
- Instrumental parts for instrumental ensembles, the interpretation of which is performed by means of musical instruments;
- The pieces intended for "musical audition", these being a combined model of the first and second musical types;
- Graphic and soundtracks of musical scores containing pieces, sequences of varied origin of musical genres;
- Painting albums able to illustrate / transmit various tangent moods with possible musical works for audience in school;
- Literary texts tangent through its semantic and imaging content with various moods reflected by musical works intended for eventual listening to music lessons and / or outside auditoriums in the discipline concerned;
- Audio-visual means (electronic devices such as computer, laptop, smartphone, tablet, radio, picup, magnetophone, etc.) and / or program products running on the MediaPlayer model, such as: MusicBee, AIMP, MediaMonkey, foobar2000, VLC Media Player, etc.) capable of reproducing the high-quality musical sound and not only;
- Musical instruments represented in different versions of physical and / or digital samples. Here, we also refer to the many classical, ethnic musical instruments from the most widespread, less widespread, rare and very rare that the teacher / student needs to know and the sound to be familiar with. These are: lute, buzuk, harp, blockflote, hand drum, crank, zither, etc.) (see Table 1, Figures 1.1.-1.2).

Table 1. Very rare classical and ethnic musical instruments



- Very rare **collection instruments** created by more or less famous masters that not every single mortal can have at their disposal, not to mention the school institutions in the world (Stradivarius violins, Soprano accordion, Caparison Angelus electric guitar, Byzantine harmonica Hohner, the Dean ML Black Gold electric guitar, etc.) (see Table 2, Figures 2.1.-2.4).

Based on the idea that a DT is a provider of educational resources designed to augment and facilitate the student's ability to assimilate the subject both in qualitative and quantitative terms, speaking about the activities to be implemented in a DT of musical education, in particular, it is worthwhile to value on such a set of didactic activities, as:

Table 2. Rare musical instruments, from collectibles

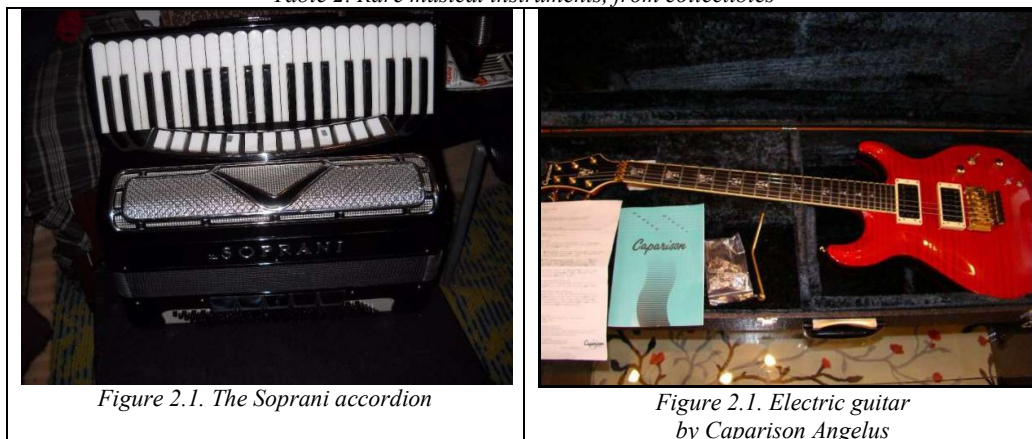




Figure 2.3. Byzantine harmonica of Hohner



Figure 2.4. Electric guitar of Dean ML Black Gold

- Music listening exercises - these activities include the listening of different musical ensembles' interpretation, these in turn being of only three types: *the voice ensemble; the instrumental ensemble; vocal-instrumental ensemble*.
  - Diving into the concert atmosphere for listening musical works in the interpretation of more or less famous musical groups - classical or ethnic musical orchestras; cor, etc. (Balmuş N., Borş Al., Burlacu N. & Chirilov V., 2016) (see Figure 3).
  - Exercises for writing sequences of musical compositions or musical dictations (Balmuş N., Borş Al., Burlacu N. & Chirilov V., 2016).
  - Following the conductor's activity in various types of musical-instrumental groups - classical music orchestras; folk music bands; chorus, etc. (See Figure 4).



Figure 3. Diving into the concert atmosphere of the Benia blockflute festival included in DT of musical education, developed by this group of authors.  
Video sequence source: <https://goo.gl/CZZ1vt>

- Solfeggio exercises, executed without words, designed to form musical hearing and ability to read the musical notes.
- Exercises for writing sequences of musical compositions or musical dictations (Balmuş N., Borş Al., Burlacu N. & Chirilov V., 2016).

Taking into account the fact that in the correct methodological selection of the musical pieces (vocal, instrumental and audio) for musical education there are several criteria, which are obligatory to be respected, a DT can be conceived, programmed and assembled according to the requirements that meet the criteria data.



*Figure 4. Activity of Master Horia Andreescu at the Philharmonic desk George Enescu. Image source: <https://goo.gl/PnLM7L>*

Thus, the DT of musical education developed and implemented by the representatives of the current group of authors from Chisinau, Republic of Moldova, teaches the future primary school teachers to take advantage of various methodologies previously elaborated by authors such as: Ana Motora-Ionescu, 1978; Ion Şerfezi, 1968, didactics as: Aurel Ivaşcanu, Ligia Toma-Zoicaş and Pavel Delion (Iaşi), who have continuously indicated for criteria for the selection of "songs for school", the following items:

**A. Criteria for selecting the vocal parts necessary for vocal musical activities**

1. It's depending from programs' contents of curricular cycles;
2. It has based on the framework objectives and / or general competences including the instructive and attitudinal component (aesthetic attitude, educational value);
3. Depending on pupils' ability to learn the sounds (Avram Florea, 2007).

**B. Criteria for selecting the vocal repertoire according with framework objectives or general competences** implies that the teacher will have to choose musical pieces that are:

1. Provided in the curriculum of each level of study;
2. A part of the songs must have vocal qualities which can be interpreted in the both mode - vocally and instrumentally, keeping one basic tone / popular way, able to fuse in a native way the instrumental and the vocal musical sheets;
3. It is possible to interpret in an accessible way by the students after their listening the models of the great vocal performers;
4. Musical parts with a compulsory didactic character, which contain in the essence, but at least 3 positions, samples and / or exercises able to exemplify necessary to be taught;



5. It imposes the need to call for solfeggio and demonstration exercises, but only in situations where the vocal piece does not meet the qualities of inductive, deductive or analogue / comparative argumentation;

6. Through its morphology and musical syntax, the literary text allows a certain flexibility to be interpreted by the pupil's personal self and / or to represent a problem piece for its constitution in a "case study", etc.

**C. Selection of the vocal repertoire on the basis of the right intonation capacity** is one of the problems that has not been fully solved, so the teacher should consider the following:

1. The pupil's voice diapason must coincide with the ambit of the song, which means, the soundtrack sounded by a pupil from the worst sound to the most acute, must be the same as the track that the song contains, from the worst to the most acute sound. This correspondence is a mandatory condition for a song to be accessible;

2. The songs must also be selected according to the life offer of the class's and school's pupils, because their voice are change its diapason, the musical timbre from one school year to another;

3. The song repertoire have to be sorted taking into account the seasons and the cultural calendar of the school and / or the community to which the student belongs, etc.

Because the didactic design is in itself recommended to be oriented towards the personalization of the teaching-learning-evaluation activity, the teacher, in the case when these complex criteria previously reviewed are not found in the generous offer of the traditional and / or alternative textbooks, DT has the possibility to include during the academic year musical pieces selected by each individual didactic framework after the prototype of a portfolio either in personal interpretation or one performed by a musician, professional interpreter, master in music, etc..

## Conclusions

It is obvious the children's attraction for music from the early years of childhood. Music, being an integral part of children's lives and preoccupations, is endowed with multiple cognitive, emotional and volitional valences, enriches the soul of children, shaping them for life. At both preschool and small school level, musical education is performed by teaching staff formed in a separate, organized way, with means and procedures specific to each educational cycle, a scenario fully implemented in the DT of musical education described in given article. Such a digital product also presents itself as an active formative component of the initial teacher education process of teachers in the primary school of tomorrow.

In our opinion, the teaching-learning-evaluation and self-evaluation activities made available to the end-users of a competitive and performing DT, regardless of the subject of the study for which it is being developed, must include various types of interactive activities such as: animation; simulations; educational games; galleries of multimedia clips with video and audio tracks of musical works to be studied; complex evaluation and / or self-evaluation activities, etc.

The whole set of didactic implementations previously enumerated and integrated into a DT for musical education are called upon both to enhance the quality of the educational process developed within that school discipline and to increase the students' interest in the studied content at the lessons of musical education and to capitalize, on the whole, the entire musical treasure recommended by the school curriculum and provided by our DT.

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