# RETHINKING TRAINING IN MUSICAL INSTRUMENTS OF STUDENTS - FUTURE TEACHERS

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**Abstract**

*This paper proposes a new approach to learning a musical instrument triggered by the opportunities offered by new technologies. This approach is necessary due to the fact that going into the learning process, these technologies create new conditions and new environment. If ignored, the future teachers would be difficult to cope with the growing needs of students and newly created environment.*

*The timeliness of this study is determined by the fact that undoubtedly one of the conditions for a successful learning process today is the use of the achievements of modern technologies that integrate with traditional methods and training.*

*The study aims to break traditional methods of learning through the integration of new technologies in teaching musical instrument. This objective is related to the ability of a teacher to use new technologies and to successfully apply them in their work.*

**Key words:** *musical instrument, accordion, synthesizer, training, students, computer software*

## 1. INTRODUCTION

Profound social changes in modern life impose new, higher standards in education. In order to be fashionable and topical it has to be enriched and improved. In response to these requirements is the activity of scientific workers, teachers and educators. It is directed towards pursuing a new and effective means of intensification and optimization of the learning process.

Intensive development of musical instruments, the emergence of new disciplines and methodologies show that a new direction is formed in music education, combining traditional knowledge with the limitless possibilities of the modern scientific and technological process.

Upgrading of computer systems and the development of multiple applications expands the interaction between a computer and a musical instrument and the embedding of it in a synthesizer makes it a system with unlimited possibilities. Its introduction in the training of students is an attempt to meet the challenges of modern education.

In recent years more and more popular are digital electronic musical instrument with automatic accompaniment (Intelligent Synthesizer), using pre-programmed arrangements as their use in real-time depends solely on the creative imagination of the performer. This provides leeway for the teaching of music and the creation of musical pieces that could hardly be realized by other means.

Digital Electronic Musical Instrument with automatic accompaniment is an electronic device with a modular architectural design. In it all modules functional blocks are used for: holding the melodic line and create different types of automatic accompaniment. Interaction is carried out by controllers. The sequence of operations is in part similar to that used in traditional music; a composer selects the combination of tools and then makes the score, giving very precise instructions for implementing [Lazarov, 1989].

Synthesizers are becoming increasingly popular in music education and displace many of today approved classical instruments. Due to its small size the synthesizer is easily portable. Some models

can be powered with batteries, making the instrument more flexible, preferred and convenient for use, and its full use can provide highly effective training.

Notwithstanding the undoubted qualities of synthesizer there has been a dispute about the possibilities for use as a learning tool for years. The problem for the application of electronic musical instruments in teaching is the subject of research by many scientists, educators and musicians - J. Odam and A. Patterson, J. Mills, A. Murray, Krasilnikov E. Parnes, C. Peshnyak and others. They share the view that the use of the synthesizer at school provides not only fun and excitement but also a highly music-educational process.

J. Odam and A. Paterson [2000] have noted that synthesizers allow students to visualize the music, developing important transferable skills. J. Mills and Murray [2000] note that access to professional-level sound makes students enthusiastic. They believe that to be effective a synthesizer(s) must be considered (as) a separate independent tool. So does Krasilnikov I. [2007], who examines the synthesizer as a new tool for learning and training of electronic keyboards - as a new subject of private didactics.

The first attempts to introduce the synthesizer in music education in Bulgaria makes Becheva M. [2001]. Between 1992-1997, she experimented in Haskovo with preschool children.

Electronic musical instruments (synthesizers) and continuously updated music software offer opportunities for interactive and highly effective training for both kindergarten and elementary school. Therefore, teachers need to have the necessary knowledge and skills to successfully use them in their work.

## 2. EXPOSITION

With the advent of new technologies the nature of work of a teacher and their role in music education has radically changed. To keep pace with the new time student teachers must be well prepared and informed about the developments and achievements in the development of modern technologies.

In preparing students "professional bachelor" of pedagogical specialties musical education takes an important place. In College - Dobrich they acquire knowledge, skills and competences both in theoretical disciplines and a musical instrument. Their complete professional preparation is a major task for every teacher, as it is an essential prerequisite for their future realization.

This paper proposes a new approach to learning a musical instrument, provoked by the opportunities provided by new technologies for music education. This approach is necessary due to the fact that going into the learning process these technologies create new conditions and new environment. If ignored, the future teachers would be difficult to cope with the growing needs of students and the created learning environment.

The timeliness of this study is determined by the fact that undoubtedly one of the conditions for successful learning process today is the use of the achievements of modern technologies that integrate with traditional methods and training.

The study aims to break traditional methods of learning through the integration of new technologies in teaching musical instrument. This objective is related to the ability of a teacher to use new technologies and to successfully apply them in their work.

Concerning the purpose it is necessary to explore the possibilities of application of computer technology in teaching accordion and synthesizer - instruments which college students are trained to use.

Give the following tasks:

1. A comparative analysis of the two key instruments - accordion and synthesizer in order to identify opportunities for involvement in the training of computer technology and music software.

2. Expose the opportunities and advantages of the synthesizer for advanced and more effective training of students.
3. Develop musical educational technology training synthesizer by integrating interactive software.

Students of pedagogical courses at universities traditionally are trained to play classical musical instruments (accordion, piano, etc.).

*Traditional musical instruments* have the ability to reproduce with the assistance of people rhythmically organized and fixed height or sounds distinctly regulated rhythms. Each tool has a special timbre of sound, its own musical expressive dynamic capabilities and specific range of sound. The quality of the sound of musical instruments depends on the relationship of the materials used for making tools and value attributed form.

*Electronic musical instruments* (EMI) are analogous to traditional instruments functional scheme, but all items are strictly separated. Feature is the presence of active elements that form and transform the vibrations. The design of the electronic tool and technology usage overcome noise and non-musical sounds that accompany useful tones in traditional instruments. An electronic musical instrument differs from traditional instruments, not just by the successful imitation of all kinds, but also with the great possibilities to create new sounds and effects.

Since 2000, students in the College-Region, ACS "professional bachelor" are trained to perform two types of musical instruments: classical (accordion) and electronic (synthesizer). Training is conducted with students from specialties *Primary School Education and Foreign Language* and *Primary School Education and information technologies* that are not matched in terms of their musical abilities. They have the opportunity to choose between two keyboard instruments - accordion and synthesizer.

*The accordion* is an acoustic musical instrument which is played with both hands. It is mainly a solo instrument. It can play both classical and folk music (Bulgarian and Russian folk music, French chansons, tango, etc.). Accordion can play the score only for one instrument while synthesizer with an arranger can play scores for several instruments at a time.

*Synthesizer* is a versatile musical instrument which can be played with only one or two hands. It is designed to play music in different styles. The synthesizer can also perform classical music, but is often used to implement pop - rock and club music. In implementing the synthesizer rhythm arranger and others can not be reproduced without the involvement of the contractor using electronics while playing the accordion the contractor is responsible for rhythmic accuracy.

Learning accordion develops habits of playing with both hands. When playing synthesizer skills are being developed for playing and improvising in various styles with only one hand. The auto arranger provides greater diversity in its use and provides greater opportunities to perform in different styles.

Electronic musical instruments (synthesizers) are compact, convenient to carry and with intuitive interface. The ability to use any samples of sounds that are loaded and then reproduced provides unlimited opportunities for student-teachers who can select and record sounds for the necessary classes.

The abilities to change styles, rhythm, tempo and timbres form immediate access and create attractive character in mastering the instrument. This implies a captivating training for people who have never played a musical instrument.

In conclusion it can be said that the advantages of the synthesizer that make it so popular and preferred are primarily its properties and possibilities offered by this instrument:

- Multitimbre;
- Use of special sound effects;
- Auto arrangement;
- Rhythmic accompaniment;

- Sequencer for recording;
- The ability to connect to a computer.

Without discounting the importance of teaching accordion it must be noted that in comparison with traditional instruments, electronic musical instruments provide more opportunities for musical training. Furthermore, in contrast to the accordion the structure of the synthesizer allows connection to computer software.

Our observations show that the interest in our activities in synthesizer is larger compared with playing the accordion. Our observations are confirmed by the survey conducted with students from teaching courses at the College. Over 70% of them prefer synthesizer as it is attractive, relatively newer and it provides greater opportunities.

The advent of new electronic musical instruments and their entry into the learning process requires the development of a new methodology for teaching synthesizer in which the opportunities of the new equipment can be used in a literate and professional way. The goal is the training of new electronic musical instruments contents of music education to become a high-tech, intensive and productive to help the educator to recognize the universality of electronic musical creativity.

In developing this technology it should be taken into account the specificity of music educational process which brings to the fore a number of problems:

1. Insufficient musical literacy of newly admitted students.

The entrance level of the musical training of the students is very low. Very few are those who know the notes. For the first time in College most of them touch a musical instrument. Especially it is difficult for students when they have to follow the music score and play simultaneously;

2. Teaching is conducted in groups of 5-6 students, making it difficult for individual work.

3. Brief training and insufficient number of hours a musical instrument envisaged in the curriculum - 30 hours practical classes in semester III and 20 hours practical classes in semester IV.

Given the above, the preferences of students and the opportunities provided by electronic musical instruments to use a computer and music software, music teaching technology training synthesizer is developed. This musical and pedagogical technology is designed to train people who are not specially selected according to their musical abilities and have never played a musical instrument. It enables the use of non-standard approach to the organization and conduct of the training.

Playing synthesizer requires contractors to have knowledge and skills in the areas of electronics and information technology, and in the field of music. To successfully deal with new tasks they are assigned, the students need to know synthesizer and be able to handle it. In training synthesizer it is necessary to take into account that the technique of execution applies not only to the speed of the fingers, but necessary skills to manage a virtuoso of the instrument panel, extracting the necessary settings and certain features during play. Therefore, when training, one should consider the specifics of the tool to use all its beauty and wealth. The absorption of the technical side of the synthesizer, the contractor has the opportunity to create their own arrangement, modify one's own electronic projects without recourse to the services of arranger and sound engineer.

**Developed musical educational technology training synthesizer** is approbated for two academic years, 50 students - professional Bachelor of College Dobrich. It is implemented in two modules. In the first module, for 30 hours, students learn executive skills for playing synthesizer, and the second module (20 hours) – they learn to work with computer software.

**Module One - Developing performing skills.**

During the training, students learn the following skills and knowledge:

1. Students become familiar with the keyboard of the instrument.

- Discussion of the types of keyboards - a comparison between the keyboard of the piano and that of the synthesizer, the difference between dynamic and non-dynamic keyboards has been highlighted.
- Students get knowledge of music theory - for octave groups, their name and location.
- Students get knowledge of instrumentology (classical and electronic instruments, keyboard instruments - types.
- Determine the location on the keyboard (knowing the layout of the keys - the keys to the location of C and F).

2. Worked on the positioning of the right hand:

- Acquire skills on how to arrange the fingers on the keyboard, keep it relaxed, with rounded toes and play with correct fingering.
- Extract spatial concepts and acquire motor skills (getting a feel for the location of their fingers on the keys and the ability to transfer the fingers).
- They play in a group - acquire basic skills for playing in an ensemble - (both begin and end, compliance with the pace and dynamics of the performance of others in the group, etc.

3. Played with the right hand exercises and songs with different note values:

- They play exercises in whole, half, quarters, eighths and sixteenths notes with the right hand;
- They play music in children's songs with his right hand, counting the left.

Creating motor skills for playing the instrument.

- Students learn the notes and their durations letters their names - extract a music-reading technique (count alone musical score).

4. They play chords with the left hand.

- Getting familiar with major chords, their words and abbreviations.
- Acquire knowledge about Major mode and signs of alteration.
- Working on the setting of the hand on the fingering and playing technique with the left hand - (making exercises with chords in the left hand).

5. Connecting the two hands.

- Working on coordination between both hands.

Students develop performing skills.

- During mastering the art of playing, students develop the ability to listen and to exercise active oversight hearing - Work with and without headphones, playing in tempo, etc.

The next stage of our work is:

6. Understanding synthesizer with automatic accompaniment and its capabilities.

- Conditional separation of the keyboard for left and right hand (playing chords with the left hand set style and playing various instruments with the right hand - timbres).

Students are introduced to the variety of timbres set in the electronic instrument. These are the timbres of different types of strings, brass, keyboards and percussion. Students are acquainted with the timbre of sound quality and as a vehicle. They acquire knowledge about the range, the character of the different instruments and their belonging to the respective groups - strings, woodwinds and brass, keyboards and percussion. They get knowledge about and acquire skills for adequate selection of different instruments by entering their numbers on the control panel.

- Starting the automatic accompaniment and a change of pace; Getting to know the "Start-Stop" button and "Tempo".

Students master their use to the change of pace - not slow to technical capabilities. Start at a slow pace and gradually speeding up. Develop skills to play in sync with the automatic accompaniment. After starting the automatic accompaniment students acquire skills to start a strong metric time.

- Understand the different genres of music - learning to choose different styles - waltz, rock&roll, hip-hop, soul, disco, dance, march, polka, tango, minuet, slow rock, etc..
- Playing in different time signatures.

Students learn about the types of time signatures and styles according to the classification of their metric specifications; Acquire knowledge about different metric pulses.

- Individual playing using headphones.

Thus, students learn how to exercise self-restraint hearing.

- Understanding the minor chords, their words and acronyms;

Students acquire knowledge of music theory for the minor mode.

- Transformation of the keyboard percussion instruments.

There is a discussion of various percussion instruments (drums, cymbals, maracas, dragonflies, triangle, etc.); their timbres and learning how to recognize them.

After they know the instrument and its capabilities, students continue to refine their music performing skills for playing with both hands.

7. Playing songs from the repertoire of kindergarten (KG) and primary school (PS) in different time signatures.

Students study:

- A new song in major mode;
- A new song in minor mode being introduced to chord features in minor modes.

8. Composing percussion arrangement of the song from the repertoire of kindergarten and primary school.

Students:

- Perform different exercises on different percussion instruments;
- Perform different types of accompaniments - a score or improvised.

They also study the compilation of rhythmic accompaniments to songs and instrumental pieces, according to their nature; acquire knowledge about the arrangement, handling score and children's musical instruments (maracas, castanets, drum, wooden sticks, triangle, cymbals, tambourines etc.).

- Writing scores of percussion arrangement on one of the scientists songs;
- Playback prepared ensemble arrangements.

9. Playing in an ensemble of songs from the repertoire of KG and PS in uneven time signatures using percussion instruments.

At this stage of the course students:

- Become familiar with the uneven time signatures in Bulgarian folk music.
- Improve their skills to play in an ensemble.

Concerning the purpose of the study, two-way communication between the synthesizer and software necessary to conduct the experiment in the second module was made.

**Second module - Working with computer software**

At this stage the teacher:

- Demonstrates computer software;
- Connects the synthesizer to a computer;
- Acquaints students with the features and interface of the program.

During the training, students learn:

- To input musical score using music software;
- To add new instruments to the score;
- To draw percussion arrangement on learning song;
- To listen to the song;
- To transpose;
- To export the song in MIDI format;
- To convert the resulting MIDI file into an audio format using another software;
- To insert audio file in an interactive software for creating karaoke files, using it to pad the future karaoke;
- To bring the text of the song divided in syllables;
- To form the visual appearance, color of text and background;
- To connect rhythmic syllables to the melody;
- To record the final version of the video file.

In implementing the communication between the computer and synthesizer the capabilities of the software to create original score recording are fully used. The text is being related with the melody via an interactive software, allowing rhythmic playing of text features of each song. The result (karaoke files) can be successfully used in the teaching practice of students. This provides fascinating, attractive and efficient learning process with the students from primary school.

In teaching musical instrument a variety of methods has been used: an illustrative visual-verbal, action "form" academic discussion, solving situational and creative tasks. Integrative connections between disciplines are also used:

- Basic Theory of Music;
- Solfeggio;
- Instrumentology;
- Harmony;
- Information Technology;
- Audio-visual and information technology in education (Avita);
- Methods of musical education and others.

Integrative approach provides unity, coherence and integrity in teaching and achieving more effective and lasting learning. Using this approach leads to improving the professional skills of college students.

During the course students not only acquire knowledge and develop skills, but also develop their musical abilities - Rhythmic Sense, modal sense, melodic and harmonic hearing, etc..

In order to facilitate the work of the teacher a map of each individual student has developed, which describes the act during the session - the theme for auditorium work, tasks and evaluation in the end of each lesson. At the end of each topic there is a current control. Any student taking this card knows what he/she could control and what has failed, what problems there are and what the assessment of his/her audience and his/her autonomous work is.

Training synthesizer provides students with specialized musical practical training. Upon completion of the course, as a result of the experimental teaching, students are able to:

- Independently explore songs from the repertoire of elementary school with varying degrees of difficulty in musical score (score) in various shades and sizes;
- Handle freely different types of electronic instruments;
- Accompany others as well as perform on their own;
- Create arrangements, then through interactive software turn them into karaoke files.

After completing the course, students have the necessary musical and performing skills which enable them to manage the resources of sound electronic tool and use it in various forms of work in the primary school. The knowledge and skills enable further training and self-development.

## 3. CONCLUSION

The featured Music-pedagogical technology provides a new perspective on the preparation of students in musical instrument. It helps to overcome the unilateral implementation activity of traditional music education through the integration of new technologies in the learning process; provides opportunities for easier control of the instrument from people who have no previous musical training.

The application of this technology helps create optimal conditions for effective mastery of not only electronic instruments but also a suitable music repertoire. This repertoire facilitates the formation of music and performing technique and its use in solving musical and pedagogical situations.

The use of interactive software to create their own arrangements, scores and sound recordings encourages students to actively participate in music activities.

The proposed music-pedagogical technology for training students - future primary school teachers in synthesizer meet the new educational requirements and provides modern, efficient and effective learning process.

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