

Online Gaming to Learn Music and English Language in Music and Ballet School Solfeggio Education

Sladana Marić

University of Novi Sad, Serbia

sladana.elt@gmail.com

ABSTRACT | This article focuses on the possible enrichment of music and art experiences of students by online gaming to learn music and English language in Music and Ballet School Solfeggio Education in Serbia. Although Solfeggio lessons are mostly in Serbian and in some schools in Hungarian language, there are indications that in the nearest future bilingual classes (e.g. Serbian – English) for music education will be organized. Today students have the opportunity to apply, take lessons and exams of international organizations, such as The Associated Board of Royal Schools of Music (ABRSM) in “Isidor Bajić” Music School in Novi Sad, etc. Thus, by online gaming in classroom or at their spare time, students can learn and master their music, English language, and ICT skills in a pleasant and motivating learning environment. From the teaching methodology aspect the educational content applied in the free online games on two websites is presented: (1) “Classics for Kids” website of Cincinnati Public Radio (“Compose your very own music!”, “Match the Rhythm”, “Note Names” and “Composer Time Machine”), and (2) “New York Philharmonic Kidzone” website by New York Philharmonic, New York (“Minuet Mixer”, “Instrument Frenzy”, “Percussion Showdown”, “Piccolo Pete Noterunner”, “Orchestration Station”, “Music Match Composer”, “Music Match Instruments”).

Keywords: English language learning, online music games, music and ballet school, music technology, solfeggio.

1. INTRODUCTION

Digital television and radio, broadband Internet connections, for example, are part of day-to-day life for a significant amount of people, at least in the Western World, and this phenomenon has only just begun. In the field of music, synthesizers and MIDI keyboards, computer-assisted composition, editing music scores, sequencing and sound editing are readily available for contemporary musicians and these technologies have opened up a wide range of new possibilities (Aróstegui, 2010:17).

In spite of several differences in formation and function, language and music are connected and interrelated within the human communication. Art music, music which is produced for aesthetic pleasure and entertainment, is present in a variety of cultures across the globe. As a genre, it has a tendency to be much more self-aware and refined than music intended for communication (Mannon et al., 2012).

By examining the role of technology in music education along with expanding the aims of music curricula and the possibilities for cross disciplinary practice, in his paper we will examine the possible enriching music and art experiences of students by online gaming to learn music and English language in Music and Ballet School Solfeggio Education in Serbia. Although Solfeggio lessons are mostly in Serbian and in some schools in Hungarian language, there are indications that there will be organized bilingual classes (e.g. Serbian – English) for music education in nearest future. Still, from the year 2007 students have the opportunity to apply, take lessons and exams of international organizations, such as The Associated Board of Royal Schools of Music (ABRSM) in “Isidor Bajić” Music School in Novi Sad, etc. Although the teaching solfeggio and theory of music is primarily based on using classical teaching technologies such as piano and music blackboard, and student’s book and music notebook as primary obvious teaching tools, by applying certain digital applications, teachers can innovate and improve the quality of their teaching process (Manojlović-Kovačević, 2010:695). Thus, we believe that by online gaming in classroom or at their spare time, students can learn and master their music, English language, and ICT skills in a pleasant and motivating learning environment that will help them to perform better in music exams in foreign language, in this case in English.

After the introduction into the problematic of the solfeggio and connections between music and foreign language learning, the greatest part of this paper deals with the basic characteristics of the named application and the possibilities of its usage in teaching process. We will present the educational content applied in 11 different free online games on two websites: (1) “Classics for Kids” website of Cincinnati Public Radio (“Compose your very own music!”, “Match the Rhythm”, “Note Names” and “Composer Time Machine”), and (2) “New York Philharmonic Kidzone” website by New York Philharmonic, New York (“Minuet Mixer”, “Instrument Frenzy”, “Percussion Showdown”, “Piccolo Pete Noterunner”, “Orchestration Station”, “Music Match Composer”, “Music Match Instruments”).

2. MUSIC AND FOREIGN LANGUAGE EDUCATION IN THE 21ST CENTURY

Nowadays, music is used as an important pedagogical tool, especially in English as a Second Language (ESL) in both young learners’ and adult classrooms. It is useful for creating enjoyable environments as well as for building listening comprehension, speaking, reading, and writing skills; it is also useful to increase vocabulary and to expand cultural knowledge (Pérez Niño, 2010).

From the psychological point of view (Hargreaves, et al., 2003) problems in music education in the new millennium are based on three main themes: ‘aims and objectives’, ‘contents and methods’, and ‘student issues’. Firstly, ‘curriculum issues’, are the most central issue of which is the distinction between ‘general’ and ‘specialist’ music education. The second important issue is that of aims and objectives: *What are arts and music education for? Is music an end in itself, such that music education presumably ought to promote musical and artistic skills, or does it have broader personal and cultural*

aims? The third issue is the balance between musical learning in and out of school. Alongside the distinction between 'home' and 'school' music, an idea achieving increasing prominence is that of the 'third environment' or self-directed musical learning in the absence of parents or teachers, with high levels of motivation and commitment.

According to Speh & Ahramijan (2010), common qualities shared by music and language add to the challenges facing teachers and learners. Each is more than the sum of its parts – individual words make up language, but communication is much more than a series of phonemes, just as the impact of a piece of music far exceeds the individual notes of which it is composed. Language and music share important features. Both are based on symbolism and symbolic systems, such as letters and musical notes. Further, they introduce new vocabulary and provide opportunities to learn key concepts. They offer various forms of communication and naturally encourage oral language development and listening skills.

3. SOLFEGGIO LESSONS IN MUSIC AND BALLET STATE SCHOOLS

Two of the main goals of music education are the cultivation of musical taste and broadening students' musical preferences. Musical preferences are influenced by many different factors, such as characteristics of music, personality traits, the listening context and music functions, such as cognitive, emotional, cultural or psychological functions. Knowing the musical preferences of students and the factors that affect their formation certainly contributes to designing curricula that are consistent with the goal of music education – the cultivation of musical taste and broadening of the student's musical preferences (Dobrota & Reić Ercegovac, 2014).

Learning solfeggio consists of acquiring certain skill in the interconnected non-autonomous fields of melodics, music rhythm, music dictation, music creativity and listening to music. In primary music state school students can learn solfeggio for two, four or six years, depending on the instrument chosen, to name just few, for example: for students learning piano the primary music school lasts six years, for those learning flute it lasts four years, and for those studying solo-singing it lasts two years. All students of music and ballet school have to attend the basic primary state schools for eight grades (age 7-14) in which they have basic lessons in music education and culture. Students in primary ballet state schools learn solfeggio for two years in the third and fourth grade of primary school, and classical ballet for four years in primary school (age 11-14) and they can later enter the secondary school that lasts four years (from age 15-18). Before the primary school students can always apply to the pre-primary ballet school at age 9-11. Those students who attend both music and ballet schools, and have passed the exams in solfeggio in music school for two grades are not obliged to follow the regular classes in ballet school and their marks are acknowledged by the school councils and commissions.

The aim of learning solfeggio in the primary music school is to acquire basic music literacy, which as a teaching process starts by introducing the first written symbols for melodic and rhythmic phenomena and lasts until the complete mastery of musical alphabet as a graphic reflection of the "musical language". However, the notion of musical literacy involves a much broader content and therefore requires close connection of solfeggio with music theory. Work on the implementation of this extensive and diverse subject matter is carried out through three main musical activities: listening, performing and making music. Basically musical creativity lies in productive musical thinking that is

different from the reproductive, namely, it does not repeat ready-made models, but by free combination creates a new logical and meaningful music content. Listening to music on solfeggio classes aims not only to awaken the students' interest and cause some emotional relationship to music, but also to familiarize them with the basic musical types, to take them into the architecture of melodies and musical forms, to sharpen the ability to perceive some musical phenomena (Manojlović – Kovačević, 2010).

The aim of learning solfeggio in the primary ballet school is to acquire basic music literacy and listening skills need to better understand the rhythmic patterns, the architecture of melodies and musical forms, all for better do their dance performance to classical music pieces.

In summary, traditional notions of music literacy focus primarily on listening to music, performing music by singing or on real instruments, writing music through standard notation, while, digital technologies such as video games allow for new multimodal forms of text and ways of listening to, reading, writing and performing music (Tobias, 2012). For teachers who want to apply music pedagogy and foreign languages teaching with digital technologies, these basic facets of connecting music, languages and ICT, can be very inspiring in managing classroom activities.

4. THE USE OF COMPUTERS IN THE MUSIC CLASSROOM

There is a clear dominance of popular music over classical music influence by modern music channels broadcast on cable and satellite television, and on radio stations, whether they use a conventional format or broadcast through a digital or internet format. Training pupils in the use of ICT as an end in itself is absolutely necessary. Furthermore, we as teachers and educators need to reflect on what we understand by music education and consider the usual assumptions implicit in the messages transmitted with the ICT (Information and Communication Technology) (Aróstegui, 2010:29).

It is of most importance that teachers adapt specific computer programs to their method of music education and not vice versa, and develop and apply the curriculum in context instead of merely copying that proposed by the authors of the textbook or the software manufacturer which do not take into account the specific details of each teaching context. Information and Communication Technology have two aspects, computers and audiovisual media, which must be used in the classroom as objectives in themselves and as an educational medium.

In practice, the availability and integration of computers in music education is very limited in terms of resources and teacher education. The teaching of audiovisual media, particularly in terms of sound, has been exploited even less (Aróstegui, 2010:28). ICT in the music classroom should mean not only knowledge and use of new technologies, but also teaching students to comprehend the meaning of audiovisual language from the assumption that knowledge is a social construction. In his work Aróstegui (2010:19) made a brief classification of computer applications for music education structured according to the use in the music classroom into seven categories:

- *Score editors* - allow us to write scores with a computer (Finale, Sibelius);
- *Sequencers* - programmes that work as virtual mixing desks;
- *Sound editors*,

- *Music arrangers* (useful in order to provide accompaniment while students play or sing or practical for teachers to create their own arrangements for school orchestras);
- *Educational programmes* - programmes created with educational objectives: sound recognition and discrimination, intervals, scales, etc., and different aspects of musical language, instrument encyclopedias, composers;
- *Internet* - web educational resources and materials of interest for music education (downloading of MIDI files or compressed MP3 files, web searches for information related to a specific educational methodology, musical style, composer, Musical Education Virtual Library);
- *Author tools*. They allow teachers to create their own materials (PowerPoint, Hot potatoes, Moodle).

Supported by today's online technology, from the perspective of education, the Internet is shifting from an information transmission-and-reception medium between teachers and students, to a constructivist teaching and learning environment, especially to COGBLe or Constructivist Online Game-Based Learning, distinguishing two paradigms (Jong & Shang, 2015):

1. *education in games* (EIG) - adopting existing recreational games in the commercial market for educational use, and
2. *games in education* (GIE) – games developed by researchers as “educational games” based upon their pedagogical propositions and articulated with explicit learning contents.

From the pedagogical aspect, student's engagement in game-based learning can be mostly viewed through three dimensions: (1) affective, (2) behavioural (non-verbal and verbal behaviour), and (3) cognitive. Game-based learning may help learners engage with learning by offering different contents (fantasy, academic and/or artistic) and providing sufficient challenges, immediate and clear feedback.

We acknowledge that most video games are not methodology-oriented (apart from those educational games), rather entertainment-oriented, and if properly chosen and applied in learning, can be seen not only as an entertainment tool, but rather as a new tool helping foreign language acquisition (or subconsciously acquiring/learning words in a foreign language), as well as in music education (especially those based on classical music).

5. ONLINE MUSIC GAMES

Although to date there has been little use of computer music technology in the early years of schooling, recent developments in the scope and quality of software are providing new opportunities for children's learning. Through such programs, children engage in complex musical processes using new forms of literacy which link sounds and visual symbols. (McDowall, 2003).

According to Thwaites (2014) music technologies are reshaping concepts of time and space, and digital mastery now appears to be the valued musical knowledge. There is no shortage of research into the use of digital technologies in music education, much of it demonstrating how specific computer-based programmes might be used effectively in the music lesson. While many of these programmes

might be of interest, some simply replace the use of 'real' instruments or other practical activities with digital technology. The author notices that most of this research promotes *educating technologically* rather than *educating musically*.

In this paper, please note that games chosen will be presented for the educational purposes only, and not for commercial ones. Furthermore, we acknowledge that the following games should be analysed in teaching methodology lectures for students studying for educators, teachers, teachers of music subjects, teachers of foreign languages, and also students of educational media design. Researches interested in developing their own *games in education* (GIE) or "educational games" may find the following games as a starting point for their further analysis of the possible impact on game-based learning music, integrated with other subjects from an early educational stage of specific arts education.

5.1. Classics for Kids - Games

"Classics for Kids" website of Cincinnati Public Radio contains lesson plans and teaching resources that give teachers practical, effective plans and activities that use classical music to help children learn. According to the information on their website the materials are based on National Standards for the Arts and state Academic Content Standards for Music, as well as on Theory of Multiple Intelligences. The materials also incorporate various philosophies, including those of Orff, Dalcrose, and Kodaly. In the following part we will briefly review these free online games titled: "Compose your very own music!", "Match the Rhythm", "Note Names" and "Composer Time Machine" available at <http://www.classicsforkids.com/games.asp>.

In the *Compose your very own music!* game students can learn the basic note durations in four quarters bar (beginner level: whole note, half note, quarter note, half rest, quarter rest, and advanced level mode: whole note, dotted half note, half note, dotted quarter note, eighth note, half rest, quarter rest and eighth rest) and their sound ranging from c^1 to f^2 improving their knowledge of notation and skill in reading notation at an early stage of learning music. A four bar melody created by the player can be sent to a friend or listened to performed on piano. This game encourages the creativity by improving the improvisations skills of the students at an early stage of learning music.

In the game *Match the Rhythm* is a great game for practicing short term memory of the rhythm played by an another person. Rhythmic patterns are divided in three levels of difficulty, by complexity of rhythmic motive connected to the coordination of left and right hand of player on the screen, although, the player uses only the space key on their computer keyboard, which means that a player is expected to listen and repeat the rhythm only. This game with basic games and basic music vocabulary in English can be very useful for the beginners in classes of general and primary music and ballet school in lessons in their first language.

Note Names game is a simple game in which a player drags a correct letter name to the space below each note to spell a word. Thus, in this games students are not only practicing naming alphabetically music notes a,b,c,d,e,f,g (solmization is: la, ti, do, re, mi, fa, sol) but also in that way spelling out words in English.

Composer Time Machine is a game for learners with already developed reading skills in English language. In this game players use the mouse to scroll through the music time periods (Baroque, Classical, Romantic, and Modern) where composers are automatically displayed. Then, students can click on the image of a composer and then review the information about the composer on the right, and information about the works that can be listened to by clicking play on the left side list of works.

5.2. “New York Philharmonic Kidzone” online games

According to the The New York Philharmonic Kidzone private policy written by Education Department of New York Philharmonic (New York), this software does not collect any personal information from users of their website. Games we chose, from those offered for free to play at <http://www.nyphilkids.org/games/main.phtml>, are titled:

- Minuet Mixer
- Instrument Frenzy
- Percussion Showdown
- Piccolo Pete Noterunner
- Orchestration Station
- Music Match Composer
- Music Match Instruments

The game *Minuet Mixer* is a music game in which the player composes or arranges the music bars or measures offered as a piano score for two hands (violin and bass cleft) viewed on the screen as blocks that can be also heard when a player clicks with his pointer. There are sixteen measure selection panels (and two modes of playing: a minuet mode and a free compose mode. In both modes a player is composing a sixteen-measure minuet for piano, which he can replay, and if downloaded for free as a full version it can be printed, saved or sent, and has some additions such as eight more instruments, etc. Thus, this game is based on music listening and reading text instructions in English.

Instrument Frenzy game is a game that involves knowledge of instrument families and groups, where a player needs to help “Maestro 2000” to sort the instruments before the concert starts, thus a player needs to “recognize”, guide the “Maestro 2000” to “catch” and “put” the instrument in the right instrument box group. There are three levels (easy, medium, and hard), four instrument boxes (woodwind, brass, percussion and strings) and every time scores a point a sound of that particular instrument is heard. In this game knowledge, action and speed in handling digital devices is much needed. In this game there is a long instruction guide in English before the start of playing.

Instructions in English for *Percussion Showdown* game are also given in English. In this game a player needs to listen to what a character “Polly” plays and add a note of your own each time, and use the arrows of the keyboard to play the percussion instruments (triangle, cymbals, drum, timpani, and bass drum). There are three levels in this game: *Cowpoke* (4 rounds, 4 instruments), *Greenhorn* (6 rounds, instruments) and *Buckaroo* (8 rounds, instruments).

This is a very demanding game because of the fact that on the second level players need to tap for some instruments two keys at the same time with the same strength to get the right answer, and not to forget to add one note more at the end of each repeated rhythmic phrase. Players also need to remember the ordering of instruments for every note. This game is very interesting to use in classes of music culture and solfeggio lessons at all levels of study, because some learners might be professionals on their instruments, but digitally not so competent to perform these games with perfection.

The game *Piccolo Pete Noterunner* is a game similar to "Super Mario", a piccolo flute character collects all the notes, avoids enemies, and passes to a next level. At the beginning there is a cartoon like introduction text instructions in English. Throughout the games when a player is losing points there are pop-out balloons with instructions.

One of the games most interesting from the aspect of learning music and orchestration is the game *Orchestration Station* in which players or students explore ways a piece of music can sound when played by different instruments. The composition to work on is the theme from "The Old Castle from Pictures at an Exhibition" by Mussorgsky, with the possibility to orchestrate the piece like Ravel. In this particular game students can explore different combinations of performance of the same piece thus experimenting with the sound of instruments and instrument groups (*strings*: violin and cello, *woodwind*: clarinet and bassoon, *brass*: trumpet and trombone).

Music Match Composers game is a flash card visual and music memory game in which some cards have pictures of Composers with their last names written below (Bach, Bernstein, Prokofiev, etc.) or a music piece students hear represented by a music note, thus making the game more difficult adding music memory practice to the visual memory. There are three levels: first level (10 cards), second level (14 cards) and third level (18 cards).

Music Match Instruments is also a flash card visual and music memory game in three levels (10, 14 and 18 cards) where each card has a picture of an instrument and its name written down in English, but when a player chooses a card he also hears the sound of that instrument so he/she can check if the sounds match also.

6. CONCLUSION

In the first part of the 21st Century information and technology are driving the pace of change and discovery at an unprecedented rate. This knowledge should affect the way that we as humans interact with the world including how we engage with music, and more importantly the teaching and learning of it (Randles, 2015). As Savage (2005:12) acknowledges, new technologies are radically transforming "the arts" in ways that we are beginning to understand and apply within education. Thus, a cross-disciplinary or multimedia approach to music education may well engage and motivate pupils more successfully, as well as facilitate the development of their broader creative skills.

In this article we focused on the possible enriching music and art experiences of students by online gaming to learn music and English language in Music and Ballet School Solfeggio Education in Serbia. The educational content applied in the free online games on two websites was presented: (1) "Classics for Kids" website of Cincinnati Public Radio ("Compose your very own music!", "Match the Rhythm", "Note Names" and "Composer Time Machine"), and (2) "New York Philharmonic Kidzone"

("Minuet Mixer", "Instrument Frenzy", "Percussion Showdown", "Piccolo Pete Noterunner", "Orchestration Station", "Music Match Composer", "Music Match Instruments"). In conclusion, we recommend that all music educators consider the changes and wider artistic opportunities that new information communication technologies (ICT), such as online music educational games can offer students in their formal and informal spheres of music education.

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SLAĐANA MARIĆ

University of Novi Sad, Serbia

Sladana Marić is a music pedagogue, pianist, coloratura soprano and composer. She graduated in two different subject areas: 1) Music Pedagogy at The Academy of Arts - University of Novi Sad (2007-2011), and in 2) English Language Philology at "The Faculty of Legal and Business Studies Lazar Vrkatić, PhD" in Novi Sad (2012). At The Association of Centres for Interdisciplinary and Multidisciplinary Studies and Research (ACIMSI) of The University of Novi Sad (UNS) (in 2013), Marić finished her postgraduate master studies in Management in Education. She is currently a student of a doctoral study programme in Teaching Methodology at the Faculty of Philosophy (UNS). She has a working experience in Music School "Isidor Bajić" as a teacher of different music subjects and English language, and in both Primary and Secondary Ballet School as a piano accompanist of classical ballet classes and a teacher of Solfeggio, Music Culture and History of Music.