

Interconnected English language and music learning with digital technologies

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Abstract

This paper examines the educational perspectives of using digital media in the interconnected learning of English and music at different levels and types of education. In this qualitative research study, an interpretative method of analysis is used. Data includes examples of online video guides to classical music listening, classical music games, animated videos, massive open online courses, and different types of virtual museums, as digital spaces convenient for the development of students' personal educational language events and communication experiences. In conclusion, examples of possible learning events in digital environments can engage learners and be a stimulus for flipped/blended/virtual learning activities and better acquisition of different language and music knowledge and skills.

Keywords

classical music education, digital media, English language acquisition, learning music

Technologie cyfrowe a nauka języka angielskiego i muzyki

Abstrakt

Artykuł jest próbą przedstawienia perspektyw edukacyjnych wynikających z użycia nowych mediów w połączonej nauce języka angielskiego i muzyki. Podstawę metodologiczną analizy jakościowej stanowi paradygmat interpretacyjny. Materiał badawczy stanowią dostępne online przewodniki muzyki klasycznej, gry, filmy animowane, kursy internetowe i wirtualne muzea. Łącznikiem dla tych przekazów jest wytwarzana przez nie wirtualna przestrzeń umożliwiająca indywidualne doświadczenia komunikacyjne i edukacyjne. Różnorodność i bogactwo dostępnych przekazów może stanowić zachętę do samodzielnej nauki języków obcych

Słowa kluczowe

klasyczna edukacja muzyczna, media cyfrowe, nauka języka angielskiego, nauka muzyki

1. Introduction¹

The musical experiences of many children in general school education globally are usually limited to a set amount of time, at a particular time of a particular day, and to the scope of musical activities. The issues around interconnection, integration and correlation of the teaching contents of languages and music across the curricula are complex, and insufficiently explored. The art of music and language learning, especially with digital media technologies (Web 2.0, online gaming, museum learning, etc.), appear to be separate fields that do not usually

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come together. Regardless of their distinct areas of focus and ways of conceptualising knowledge, belief, and experiences, we can maximise the learning potentials of students from diverse cultural backgrounds by integrating or interconnecting them together (Marić 2015).

As Michał Daszkiewicz (2010: 120) notices, although there is a shortage of interdisciplinary approaches, “it appears that both theory as well as practice can lead to substantial findings and flourish whenever and/or wherever two disciplines are being explored and exploited simultaneously”. In addition, Viladot and Cslovjecsek (2014) acknowledge that “for teachers who have been trained within a system that views the different subjects in isolation, integrated work on different parts of the curriculum is a major challenge”.

The *interconnected*² learning approach is based on combining the strengths of two or more – (similar) disciplines in different learning contexts, with the aim of reducing language barriers and helping social integration and creative interaction, nurturing self-confidence and self-expression, and also improving intercultural understanding. Furthermore, subject *integration* is based on combining, or mixing two or more subjects by inserting changes to the content of learning of a particular subject in order to become more effective in the processes of teaching and learning. In many learning contexts music can be integrated into English language teaching and learning, in the form of a simplistic or complex use of songs and music to teach the alphabet, counting, sounds, language patterns, rhythms and poetic forms of expression, etc. Integration is fundamental in *Content and Language Integrated Learning* or CLIL which usually refers to teaching subjects such as maths, science, history and geography to students through a foreign language, but it can also refer to teaching music as a subject in a foreign language. Subject correlation, interconnectedness and integration can also take place in the teaching

² Interconnected – related to each other; complexly related, connected or interrelated.

and learning of a foreign language, in this case English, specifically music education at secondary and tertiary levels of study (e.g. English for students of music subjects and Music ESP). Both music and language use sound as a medium to transfer meanings, have visual representation through symbolic systems and share similar mechanisms of learning and memory. They can both serve to motivate, enhance and reinforce communication and learning in the classroom and beyond. Interconnected learning of music and English language learning as an approach is, therefore, based on combining the strengths of these two disciplines with the use of digital media technology in different learning contexts.

In this digital age, where students need to develop several skills and different literacies to cope with the needs of a changing world, studies have been conducted on the Web 2.0 tools³ that are emerging and offer opportunities for sharing, collaboration, socialisation and creative interaction in music education and also English language education. Furthermore, ICT is applied in various musical fields, such as the domain of performing disciplines, historical - humanistic disciplines (History of music, Aesthetics, Musicology, etc.) and applied music disciplines (Theory of music, Harmony, Counterpoint, etc.).

The purpose of this study is to identify convenient digital spaces for the development of students' personal educational language events and communication experiences in interconnected learning of English and music at different levels and in different types of education. The research literature reviewed in this article mostly focused on exploring the possible outcomes of usage of ICT in music education and necessary changes in music pedagogy (McDowall 2003; Gall and Breeze 2006; Nedelcut et al. 2008; Nikolaidou et al. 2008; Nedelcut and Pop 2009; Crawford 2009; Southcott and Crawford 2011; Thwaites 2014; Randles 2015 etc.). In terms of teaching English as a foreign language (EFL), previous research focused on

³ The most common Web 2.0 tools are: blogs, wikis, Google Drive, Google Sites, Google +, Skype, Facebook, Twitter, YouTube, Flickr, Slideshare, etc.

the teachers' and/or students' attitudes towards Web 2.0 technologies in different continents, states, and regions (De Haan, Reed and Kuwada 2010; Karkoulia 2016).

Integration of Web 2.0 tools in both music and EFL teaching is a complex and challenging process, depending on many factors such as: teacher training and knowledge, teacher beliefs and attitudes towards technology, school equipment, Internet access, working conditions, and classroom management problems (time pressure, too much course book material to cover, or lack of freedom to create their own lessons). Crawford (2009) states that "for teachers to extract the most from what technology is available, it is important to use it in authentic learning contexts and to enhance the subject, and allow students the opportunity to develop skills necessary in the contemporary practice of music and society".

In this paper we examine the educational perspectives of using digital technologies in learning English as a foreign language, and also music subjects (music analysis, harmony, history of music) at different levels of general and artistic education, from pre-primary to secondary level (secondary music school), up to the tertiary level of education (academy of music).

2. The aim of the research

The aim of this research was to examine the educational perspectives of using digital technologies in interconnected learning of English as a foreign language and music subjects at different levels of general and artistic education.

3. Methodology

In this research study, a qualitative method of (content) analysis was used as an open-ended, unstructured method, looking for and capturing uniqueness, valuing quality, using explanation and interpreting (making meaning of the data) as tech-

niques (Cohen, Manion and Morrison 2007: 355). This method of qualitative analysis in education conveys understanding of the phenomenon in all its complexity and is characterised by a lack of predetermined constraints on outcomes, with cases for study selected according to the focus of interest (e.g. in analysis of administrative policy in education, interpretation of culture, practices and artifacts, language itself, in the interpretation of textbooks and other materials etc.).

For the analysis, the following digital spaces convenient for the development of students' personal educational language events and communication experiences, were chosen: (1) video guides to classical music listening, (2) online classical music games, (3) online animated videos, (4) massive open online courses (MOOCs), and (5) different types of virtual museums.

4. Towards interconnected English language and music learning in digital environments

In spite of several differences in formation and function, language and music are connected and interrelated within human communication (Mannon et al. 2012). According to Speh and Ahramijan (2010), "common qualities shared by music and language add to the challenges facing teachers and learners", because "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". Pérez Niño (2010) argues that 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 learning environments, as well as for building language skills (listening comprehension, speaking, reading, and writing skills) and expanding cultural knowledge.

The reasons for interconnecting "musical lessons" and foreign language teaching can offer advantages related to the perceptual-motor skills, psychological aspect (recalling and memorisation of words, sounds and grammatical structures), socio-

cultural aspect (communication, cross-cultural awareness and knowledge), motivational aspect and emotional intelligence.

4.1. Video guides to classical music listening

Vandergrift and Goh (2012: 218) acknowledge that listening instruction has been associated with technology ever since the acoustic signal could be captured in a form that permitted repeated listening, starting with the phonograph, film, television and audiotape, digital video and audio, computer-mediated audio and video, hand-held MP3 players and more. By exploring the potential of technology for the teaching of foreign or second language listening in multimedia environments (visual media - video, transcripts and captions; podcasts; oral computer-mediated communication – CMC) the authors conclude that “the promise that increased technological sophistication will lead to increased effectiveness of listening pedagogy *has not yet [in 2012] been demonstrated, presumably because learners may not possess the metatechnical skills and strategic knowledge to use the support options efficiently*” (Vandergrift and Goh 2012: 218).

According to Stempleski (2002: 366) video is “an extremely dense medium (one which incorporates a wide variety of visual elements and a great range of audio experiences in addition to spoken language) which, as an instructional medium, can generate a much greater amount of *interest and enjoyment* than the more traditional printed materials” (2002: 364).

In this part of the paper, we look at the possible benefits of using seven short video guides to classical music listening in teaching English as a foreign language and music subjects (music analysis, harmony, history of music) at the secondary level (secondary music school) and tertiary level of education (academy of music). The following video materials can serve as part of the curriculum or a curriculum extra supplement, especially because ESP-Music⁴ textbooks and materials are al-

⁴ ESP – English for Specific Purposes.

most non-existent on the publishing market. The proposed videos can engage learners' stimulus for classroom activities and better acquisition of different language and music skills. They can provide authentic language, content and specific vocabulary that students need to acquire in learning at the secondary or tertiary music educational level of studies. At these levels of study students should be able to listen to, read and write about, or give an academic presentation on musical topics and issues using an academic style, adequate and appropriate musical language and relevant audio and/or visual aids. These videos, in British English, by the Philharmonia Orchestra (UK) are originally made as a digital installation titled "Universe of Sound *The Planets*", and the segments of each movement are published on their YouTube channel for watching free of charge. The total length of all seven free online videos is 30' and 35", or an average duration of 4' and 33" per video. The video titles are the following: (1) "Mars, the Bringer of War"; (2) "Venus, the Bringer of Peace"; (3) "Mercury, the Winged Messenger"; (4) "Jupiter, the Bringer of Jollity"; (5) "Saturn, the Bringer of Old Age"; (6) "Uranus, the Magician"; (7) "Neptune, the Mystic".

Below, a screenshot from the video (Figure 1) and the part of the transcript (by Slađana Marić) of the third video of "The Planets" – "Mercury, the Winger Messenger"⁵, are given:

TRANSCRIPT: The Planets – Mercury, the Winger Messenger: "[...] If we look at the orchestral score, notice that Holst incorporates some very unusual techniques, with some instruments scored at two flats whilst others play with three sharps and some have no key signature at all. Why would he do such a thing? While Mercury's music seems to dash quickly between very different tonalities, our ears are literally bounced from one key to another, which is why he uses multiple key signatures in the score. Holst also drastically plays around with the timing of this movement as well. The

⁵ "The Planets" – "Mercury, the Winger Messenger", <<https://www.youtube.com/watch?v=8ykZKsrs8LM>>.

music is fast footed and lightly scored, and feels similar to a scherzo movement of a symphony”.

From the transcript we can mark the music specific vocabulary and structures, such as: *multiple key signatures, score, waltz, crochets, cross rhythm, instruments scored at two flats, no key signature at all, different tonalities, three sharps, quavers, semiquavers, the orchestral score, the rhythmic flow, lightly scored, rhythmic ambiguity* etc. Additionally, there are general English vocabulary terms that can also be acquired, such as: *cutting against, fast footed, keep (the sound) fresh and exciting, played twelve times in a row, rise up through, to dash quickly between, (to) tumble gently downwards, whilst* etc.



Figure 1

The melodic line structure presentation (screenshot of the free online YouTube video “The Planets – Mercury, the Winged Messenger”)

4.2. Online classical music games

Classical music games⁶ in learning and education can be seen as tools for practicing and/or evaluating acquired skills, but also as a powerful means of creating immersive learning experiences, as they can offer sufficient opportunities for students to engage in problem solving and experimentation in both music and language learning. The effect of interactivity with a music video game on second language vocabulary recall was investigated in a research study done by De Haan, Reed and Kuwada (2010: 74) and the results showed that both the players and the watchers of the video game recalled vocabulary from the game.

By taking part in the activities in English, with proper music technology, such as online classical music video games, either as extracurricular supplemental activities or as classroom tasks, learners' understanding and skills will be developed in a number of ways. They will

- be encouraged and motivated to listen carefully to a range of sounds (e.g. games “Wild Music website”);
- recognise rhythmic sounds, distinguish between sounds that have a “steady beat” and sounds that do not, practice short-term memory of the rhythm played by an another person (e.g. Music Ace Deluxe: Hearing and echoing rhythm, “New York Philharmonic Kidzone” – Percussion Showdown; Classics for Kids – “Match the Rhythm” games);
- be provided with opportunities to listen to and create short rhythmic patterns (e.g. “New York Philharmonic Kidzone - Percussion Showdown” game);
- develop thinking skills (e.g. “BBC Northern Ireland”, “Musial Mysteries”, “Carnegie Hall *Listening Adventures*” games);

⁶ All the materials selected and analyzed (videos, online games, etc.) are available on the Internet free of charge, and some in many different languages. These materials were chosen because of their language and/or music *educational quality and potentials* when used in learning situations. They were not used for commercial purposes in this paper.

- begin to understand how the elements of music are used to describe things and how music can help express feelings and create different atmospheres (e.g. “SFS Kids Fun & Games with Music – Listen – “Music Streams”, “Musical Skies”- Mood Journey, SFS Kids: Fun with music – The SFS Harmonizer, The Harmony Viewer” games);
- (by reading in English) begin to understand how the choice of instruments in a musical piece is important in creating different effects and atmospheres (e.g. “New York Philharmonic Kidzone - Orchestration Station” game);
- be able to identify the sounds of common instruments and gain knowledge of instrument families and groups (e.g. BBC Musical Mysteries: Orchestra Fact Files, Music Match Instruments, Instrument Frenzy; SFS KIDS Fun with Music – Instruments of the orchestra; SFS Kids Fun & Games with Music – Perform – “Instrument Garden” games);
- develop their own creative skills in writing music by reading instructions in English and listening to examples of different pieces of music (e.g. “New York Philharmonic Kidzone – Online Games Minuet Mixer”, “SFS Kids Fun & Games with Music – Compose – “Music Mountain”, “SFS Kids Fun with Music – The Music Lab – “Composeizer” games).

The expected possible and positive aspects of students playing classical music online games in classroom or in their spare time cannot only be seen in terms of both *language* (literacy, listening skills, general and music specific vocabulary in English) and *music*, but also their *physical and psychological state*. The positive aspects of students playing classical music online games, in terms of learning *music*, can be the following:

- developing music culture and literacy;
- developing effective listening to sounds and (classical) music;
- learning about different instruments and acquiring different sounds (dynamics, rhythm, movement and pauses in sound; the sound of voice and different instruments, e.g. strings, wind instruments, percussion, piano, orchestra);
- learning about composers and styles in music;
- memorising and recalling rhythmic and melodic patterns;

- learning the basics of harmony and instrumentation;
- developing basic improvisation and composing skills.

Finally, in terms of *physical and psychological state*, the positive aspects can be the development of motor skills and coordination of hand (body) movement, and emotional and socio-cultural behaviour.

4.3. Online animated videos (Cartoons)

From the *Tom & Jerry* animated series of short films by the media company studio Metro-Goldwyn-Mayer or MGM (Hollywood) we propose, to students of all ages, the following four cartoon episodes with classical music themes: (1) “Johann Mouse” (1952),⁷ (2) “Hollywood Bowl” (1950),⁸ (3) “The Cat Above and the Mouse Below” (1964),⁹ and (4) “The Cat Concerto” (1947).¹⁰ Only the first episode has narration, which we will look in more detail, but we propose these other episodes firstly because of their quality of music choice:

- “The Hollywood Bowl” - Johann Strauss II Overture for Operetta “The Bat” (Die Fledermaus);

⁷ “Johann Mouse” (1952) (directed by William Hanna and Joseph Barbera, produced by Fred Quimby with music by Johann Strauss II with musical direction by Scott Bradley, piano arrangement created and played by Jakob Gimpel, narration by Hans Conried), <<http://www.dailymotion.com/video/x2xrpgw>>.

⁸ “Hollywood Bowl” (1950) (directed by William Hanna and Joseph Barbera, produced by Fred Quimby, the music was scored by Scott Bradley, making use of Johann Strauss II's Overture of "Die Fledermaus,"), <<https://www.dailymotion.com/video/x3nlyp0>>.

⁹ “The Cat Above and the Mouse Below” (1964) (produced and directed by Chuck Jones, the music was scored by Eugene Poddany, making use of *Cavatina di Figaro*: “Largo al factotum della citta” from the opera *Il barbiere di Siviglia* by Rossini, Baritone Terence Monck), <<https://www.dailymotion.com/video/x51tlb6>>.

¹⁰ “The Cat Concerto” (1947) (produced by Fred Quimby, directed by William Hanna and Joseph Barbera, with musical supervision by Scott Bradley), <<https://www.dailymotion.com/video/x39zrqc>>.

- “The Cat Above and the Mouse Below”, better known as “The Barber of Seville”: Figaro's Aria (Il barbiere di Siviglia, cavatina di Figaro: “Largo al factotum della citta”) by Gioachino Rossini;
- “The Cat Concerto” - *The Hungarian Rhapsody No. 2* by Franz Liszt.







Secondly, we propose these cartoon episodes because they can be used for practising speaking, or retelling the plot of a story and presenting or introducing the roles of the players such as: *an opera singer, pianist, conductor, player in an orchestra, flutist, violinist*, and also the musical instruments of a symphonic orchestra, as most of the instruments are illustrated through image and sound in these episodes.

In the following part we present the transcript of the story from the beginning of the cartoon “Johann Mouse” where the main seven points of the story are illustrated with seven different tunes by Johann Strauss II (T1 – Wiener Blut (Viennese Blood or Viennese Spirit), Opus 354 (orchestra, piano); T 2 – The Blue Danube Waltz (piano); T 3 – Frühlingsstimmen (piano); T 4 – Perpetuum Mobile (orchestra + piano); T 5 – Einmusikalischer Scherz, Op. 257 (piano + orchestra); T 6 – Emperor Waltz Op. 437 (orchestra), and T 7 – Tritsch-Tratsch Polka Op. 214 (piano + orchestra)):

T 1 - “This is a story of a waltzing mouse.
 His name was Johann, and he lived in Vienna,
 in the home of Johann Strauss.
 And each day as this famous musician played,
 Little Johann couldn't resist waltzing to the beautiful music.
 And each day, watching and waiting, was the cat.
 And every day he would try to catch him!
 But he would fail.
 However, this didn't discourage the cat, because he (Tom) knew that
 each day when the Master played, the mouse would waltz.
 And the cat would try again... And again...And again.
 One day the Master went away on a journey.
 This left the cat in a serious predicament.
 He knew if there were no music the mouse wouldn't waltz.

T 2 - (Tom looking at a book “How to play the waltz in Six easy lessons by Johann Strauss”).
Why couldn't he the cat learn to play?
(Tom playing the six easy lessons, and then playing the waltz
- **T 2**)...”

For interconnected learning of music and English at an early age, the American animated television educational preschool series “Little Einsteins” (50 episodes) can be used. It was specifically designed to teach music appreciation and the target demographic art by integrating famous or culturally significant music and art works. In terms of music education, these cartoons in English (American/British), but also in many world languages including Greek, Spanish, Italian, French, Chinese, introduce classical music, most typically from the Baroque, Classical, and Romantic periods, into the main aspects of each cartoon episode (the scenery, plot and soundtrack). In brief, the *Little Einsteins* cartoon episodes, in general, are focused on teaching music and arts with the emphasis on developing the motor skills and coordination of hand (body) movement of preschool children, but also emotional and socio-cultural behaviour. In terms of foreign language learning, young students can practice listening and speaking skills, general, music, dance and art vocabulary. They learn about different instruments, acquire different sounds (e.g. strings, wind instruments, percussion, piano, orchestra), learn about dynamics, rhythm, movement and sound pauses, the musical topic of imitation in tunes, as well as practising memorising a melody and recalling all of its parts (music memory puzzles – Figure 3), and singing a melody or a song with words solo and in a group.

<p>1.</p>  <p>Quincy: Mr Penguin says that we need to get to the other side! June: It's the only way to bring the ice-cream to his best friends' birthday party. Anny: But we can't get to the other side the bridge isn't finished! Leo: Look Mr Penguin! Rocket found a pile of pieces to build the rest of the music bridge. Anny: If Mr Penguin can find the right pieces, he can build the rest of the music bridge.</p>	<p>2.</p>  <p><i>(music)</i> Q: Don't worry Mr Penguin I can help you find the right pieces. <i>Mr Penguin sings a music puzzle piece (bar 2).</i> Q: Mr Penguin says that the next measure of the bridge song has four notes. Like this. <i>Violin- music puzzle piece (bar 2).</i> So, we need to find the piece that has four notes on it.</p>	<p>3.</p>  <p>Q: Let's listen with Mr Penguin to this first piece. <i>(music puzzle piece - bar 4)</i> Q: Does this piece sound like four notes? Let's count and see. <i>(music puzzle piece - bar 4)</i> One-two. Q: That's only two notes. We need the piece that has four notes. <i>(music)</i></p>
<p>4.</p> 	<p>5.</p> 	<p>6.</p> 
<p>Q: Let's listen to this piece. <i>(music puzzle piece- bar 3)</i> Q: Does this piece sound like four notes? Let's count! One, two, three, four, five, six. Six notes! That's too many! We</p>	<p>Q: Mr Penguin wants us to listen to this piece. <i>(music puzzle piece - bar 2)</i> Q: Does this piece sound like four notes? <i>(music puzzle piece - bar 2)</i> - One, two, three, four. Yes! We found the measure</p>	<p>Which piece plays six notes: the long piece <i>(music puzzle piece - bar 3)</i> or the short piece <i>(music puzzle piece - bar 4)</i>? Q: Right! The long piece plays six notes. <i>(music puzzle piece -</i></p>

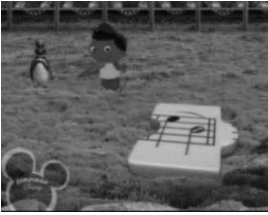

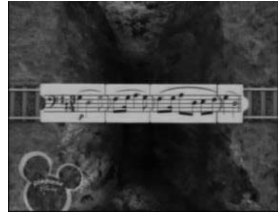
<p>need the piece that plays four notes.</p>	<p>that has four notes. <i>(music)</i> <i>(music puzzle piece - bar 2)</i> Q: We're building more of the bridge. <i>Mr Penguin sings music puzzle piece - bar 3</i> Q: Right Mr Penguin, now we need the piece that plays six notes. Like this. <i>Violin - music puzzle piece - bar 3.</i></p>	<p><i>bar 3).</i> One, two, three, four, five, six. * <i>(music puzzle bar 3)</i> Anny: The bridge is almost finished. <i>(music puzzle bar 2 and 3)</i></p>
<p>7.</p>  <p><i>Mr Penguin sings music puzzle bar 4)</i> Q: Right! All we need now is the piece that plays two notes. <i>Violin - music puzzle bar 4</i> Q: How many notes does this piece have? <i>(music puzzle bar 4).</i> One-two. Yes, that's it!</p>	<p>8.</p>  <p><i>(music)</i> * <i>(music - music puzzle bar 1, 2, 3, 4)</i> We did it!</p>	<p>9.</p>  <p>Q: Thanks for helping us finish the unfinished bridge. (music)</p>

Figure 3

Transcript with illustrations (screenshots) from the *Little Einsteins* episode “Mr Penguin's Ice Cream Adventure”¹¹ (music theme from Symphony No. 8: Unfinished Symphony by Franz Schubert)

¹¹ *Little Einsteins* episode “Mr Penguin’s Ice Cream Adventure”, <<http://www.dailymotion.com/video/x4vk9pp>>.

4.4. Massive open online courses (MOOCs)

Thousands of learners, especially those in the academic world, are searching for new ways to learn and be involved in education, in order to enhance their knowledge in certain field(s) on a mostly voluntary basis. Although Massive Open Online Courses (MOOCs) are one of the current trends in technology enhanced education, research carried out addressing this upcoming phenomenon is still at an early phase (Lackner et al. 2014). In the recent educational landscape, three types of MOOCs can be differentiated in literature: c- (“connectivistic”), x- (“extensive”) and meso-MOOCs (Schoenack 2013: 100).

MOOCs can be regarded as educational or learning “events” on students’ individual learning paths and defined as independent complex systems of multimedia teaching materials with a characteristic structure and specific set of functions, such as informational, motivational, communicative, systemic, self-educational, supervisory or feedback, and formative-educational with the possibility to facilitate large-scale learning and education in different and interdisciplinary scientific fields. According to Maria Perifanou (2015) MOOCs support the idea of distributed intelligence and lifelong learning, open learning, open educational resources and represent a new generation of online education that encourages the development and delivery of courses that are massive, open, and participatory.

In what follows, example titles of free massive online open courses¹² in the field of music in English are given that can be used for providing an efficient support to language and music learners (combining collaborative and personalised learning and developing a rich vocabulary to talk about different aspects of music), e.g. “edx” platform: (1) “Jazz: The Music, The Stories, The Players”; (2) “Jazz Appreciation”; (3) “Music Tech-

¹² The learners need to register on the platform and can participate in the course free of charge. However, they need to pay a certain symbolic fee if they want to receive a certificate of participation with detailed information on their progress on the course.

nology Foundations”; (4) “Music Production and Vocal Recording Technology”; (5) “Introduction to the Music Business”; (6) “Introduction to Italian Opera”; (7) “Music in the 20th Century”; (8) “Introduction to Music Theory”; (9) “First Nights: Beethoven’s 9th Symphony and the 19th Century Orchestra (Harvard University)”; (10) “First Nights: Monteverdi’s L’Orfeo and the Birth of Opera”; and (11) “First Nights: Handel’s Messiah and Baroque Oratorio”.

Courses can be divided into lessons, or weeks of learning with different assignments from listening, reading, writing, automatically graded quizzes, peer review assignment, and discussions. Many music MOOCs can be used in classes of English language and in music subject courses (e.g. music analysis, harmony lessons, history of music, etc.) in both secondary music school and music academies or faculties of music. For example, the Edx course “First Nights: Beethoven’s 9th Symphony and the 19th Century Orchestra” by “HarvardX” offers quality recordings of class lectures and music performances (e.g. Harvard Radcliffe Orchestra) and recordings of video performances (3 to 15 minutes) with music analysis “lecture style” and on the concert stage (e.g. a rehearsal and lecture with Prof. Dr Thomas Kelly). These videos include visual aids, graphic scores, structure charts, sound inserts, and even live performances of certain parts during the presentation. In terms of language learning, transcripts in the form of a downloadable text document, in the moving side bar next to the video or as subtitles on the screen, can be very useful for both teachers and learners.

After watching a video there are usually multiple choice questions, text input or check boxes, comprehension quizzes, discussions, listening exercise (20 seconds to 3 minutes) and written assignments. If the learner fails to get the right answer, there is always an explanatory note. For example, after finishing the fifth lesson, there is a written exercise or assignment on the theme “What was it like to be there?”:

Describe some of the impressions that reviewers of Beethoven's premiere had. What did they say about the orchestra's performance? What kinds of evidence can we use to reconstruct the first performance? What kinds of musical details can we infer about the quality of the performance, the amount of preparation, and the kinds of musicians who played in the concert? Give at least two examples from the lecture (edx course: First Nights: Beethoven's 9th Symphony and the 19th Century Orchestra, HarvardX, Unit Quiz, Retrieved on May 8, 2016).

The language is not "strictly" formal or academic, because it is a spoken lecture with anecdotes, interesting digressions, play, mimicry, gestures, pointing, and singing (e.g. "He used just those three notes. *Bump, bump, bum.*"), etc. That is why the visual image of the speaker and sound presentation is very helpful in understanding the language uttered as well as music in focus.

Below we present extracts of transcripts from the edx course: "First Nights: Beethoven's 9th Symphony and the 19th Century Orchestra", HarvardX, Lesson 4, Retrieved on May 8, 2016:

THOMAS FORREST KELLY: We've talked about Beethoven being a composer who uses motifs, tiny little rhythmic or melodic ideas to make big structures. The last movement of this symphony, or at least when Beethoven gets to the tune of the "Ode to Joy", uses a different, but very interesting kind of procedure, because he uses that melody, that song that he composes, and uses it in a million different ways so that it becomes transformed. It almost becomes a motif, even though it begins not with a tiny little fragmentary idea, but with a whole organized, balanced song form. You'll remember that it begins, is played just by the cellos and double basses with no accompaniment. And then we have various variations that build up in the orchestra. Here are parts of two of those variations. [MUSIC – BEETHOVEN, "ODE TO JOY"]

Using these course videos or materials in classroom teaching and practicing speaking about music can render abstract mu-

sical concepts more concrete, make implicit knowledge explicit, develop students' critical thinking skills, lead to an increase in their musical vocabulary and support their musical understanding.

4.5. Virtual museums

By applying the constructivist model of learning in museums, which focuses on the learner and the meanings they make based on their prior experience, knowledge and interests, *virtual museums* can create a pleasant, friendly and stimulating learning environment that meets individual needs for concrete experience, individual contemplation, communication and online social interaction (Gajić and Milutinović 2011: 290). Digital museums, which can include a number of the following: a 360° virtual tour of the museum rooms or galleries, general information, descriptions, texts about objects and images, online collections, YouTube channel or videos on pages, music in the background, have been classified in the following groups or categories:

1. Museums with digital technology interactive installations or equipment in exhibitions (MIM – Musical Instrument Museum; Haus der Musik);
2. Museum websites (MIM – Musical Instrument Museum; Metropolitan Museum of Art/Thematic Essay (New York, USA); Liszt Ferenc Memorial Museum and Research Centre; NMM – The National Music Museum; Aram Khachaturian Museum; Museum of Making Music; The National Museum of American History/Music and Musical Instruments; The University of Edinburgh – The Musical Instrument Museum Edinburgh);
3. Museums named as “Virtual Museums” (Aram Khachaturian Virtual Museum; The National Ballet Canada – Virtual Museum);
4. Museums named as “Online Museums” (Musical Instrument Museum Online – MIMO Exhibitions Europeana);
5. 3D Virtual Museums (New York Philharmonic for Children “Kidzone”/ Composers’ Gallery).

Different in terms of style and features, digital or virtual museums, or museum websites as the most common type of virtual museum existing on the Internet today, can provide supplementary learning resources for achieving music and language learning outcomes set out in lessons of English (as a foreign) language, music lessons, and CLIL lessons, or other teaching and learning contexts (Marić, 2015). In terms of both music and language education, teaching and talking about music can help to widen learners' musical interests and encourage their active membership in a diverse musical and social life.

5. Conclusions

In this paper we examined the educational perspectives of using digital technologies, such as video guides to classical music listening, online classical music games, online animated videos (cartoons), massive open online courses (MOOCs), and different types of virtual museums, as convenient media that can offer opportunities for students to engage in problem solving and experimentation in interconnected music and language learning. The analysed data can provide opportunities for the development of students' personal educational language events and communication experiences in different contexts of learning English as a foreign language (general EFL, ESP), CLIL, and the learning of music subjects in English (music analysis, harmony, history of music) at different levels of general and artistic education, from pre-primary to secondary level (secondary music school), up to the tertiary level of education (academy of music) or in informal, playful or self-guided learning with the use of digital media.

We believe that both children and adults can be inspired, motivated and enriched by using digital media in learning a new language through musical activities or music through language activities, that simultaneously develop their language, musical and digital skills. In conclusion, examples of

possible learning events in digital environments can engage learners and be a stimulus for flipped/blended¹³/virtual learning activities and the better acquisition and transfer of language and music knowledge and skills between domains.

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¹³ From both the student's and the tutor's perspective blended learning is dependent on the following types of blend: the *method* blend, the *content* blend, the *space* blend, the *time* blend, the *media* blend and the *activity* blend (Mokwa-Tarnowska 2013: 186, according to Littlejohn and Pegler 2007).

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