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**SVEUČILIŠTE U ZAGREBU
UČITELJSKI FAKULTET
ODSJEK ZA UČITELJSKE STUDIJE**

**KARLO KURTALJ
DIPLOMSKI RAD**

**INTEGRATION OF MUSIC IN THE
TEACHING PROCESS**

Zagreb, rujan 2020.

SVEUČILIŠTE U ZAGREBU
UČITELJSKI FAKULTET
ODSJEK ZA UČITELJSKE STUDIJE
(Zagreb)

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I SUMMARY

This master thesis *Integration of Music in the Teaching Process* has two major purposes, one is to investigate the usage of music in teaching process while the other is to determine how much the music is used in Croatian schools by teachers. The research of this thesis was conducted by gathering information from teachers with a specially designed questionnaire which followed the structure of the entire master thesis and observation of a specially designed class activity which included ten first and second grade students who voluntarily participated in it through a time period of five days.

Research about music history and music in general was shown to help the reader to better understand the topic of the paper. This thesis obtained information about impact of music on the brain and why it should be used more in teaching and learning process by researching various sources and showing ways of useful music integration techniques. Audio recording technology was introduced as a new way of integrating music into education which was then followed by a research in which children used the technology to make their own song. The result showed that children engaged more into the entire process because it was a new way of integrating music rather than just playing a song, which was their final result at the end – their own song. After the students, teachers were asked to voluntarily fill in a questionnaire on their music usage in teaching process. Results showed that teachers use music more than it was expected initially when the research started. Even though teachers use music in different ways, 87% of them use music in teaching process.

The author suggests further research on audio recording technology usage in education and encourages the reader to consider more usage of music in education.

Key words: music, music integration, teaching process, audio recording, creative teaching, education

II SAŽETAK

Diplomski rad *Integration of Music in the Teaching Process* ima dvije značajne svrhe, jedna je istražiti korištenje glazbe u nastavnome procesu. Druga je pak, utvrditi koliko učitelji koriste glazbu u školama u hrvatskoj. Istraživanje ovog rada provedeno je prikupljanjem informacija od učitelja uz pomoć specijalno dizajniranog upitnika koji prati strukturu cijelog diplomskog rada i promatranje specijalno osmišljene nastavne aktivnosti u kojoj je dobrovoljno sudjelovalo deset učenika prvog i drugog razreda u trajanju od 5 dana.

Istraživanje o povijesti glazbe i glazbi općenito prikazano je kako bi čitatelj mogao bolje razumjeti temu rada. U ovom radu prikupljene su informacije o utjecaju glazbe na mozak te zašto bi glazba trebala biti više korištena u procesu učenja i poučavanja. Istraženi su mnogi izvori i prikazani su korisni načini kako koristiti tehnike uključivanja glazbe u proces poučavanja. Tehnologija snimanja i obrade zvuka predstavljena je kao novi način uključivanja glazbe u obrazovanje nakon čega je predstavljeno istraživanje u kojem su učenici koristili tehnologiju kako bi napravili svoju pjesmu. Rezultati su pokazali kako su se učenici više uključili u cijeli proces jer je to bio novi način korištenja glazbe u nastavi umjesto reproduciranja pjesme na satu, jer je njihov konačni rezultat bio njihova pjesma. Nakon učenika, učitelji su dobrovoljno ispunjavali upitnik o njihovom korištenju glazbe u nastavnome procesu. Rezultati su pokazali da učitelji koriste glazbu više nego što je bilo inicijalno očekivano kada je ovo istraživanje započelo. Iako učitelji koriste glazbu na različite načine, čak njih 87% koristi glazbu u nastavnom procesu.

Autor predlaže daljnje istraživanje korištenja tehnologije snimanja i obrade zvuka u obrazovanju, te potiče čitatelja da promisli o većem korištenju glazbe u nastavnome procesu.

Ključne riječi: glazba, integracija glazbe, nastavni proces, snimanje zvuka, kreativno poučavanje, obrazovanje

1. INTRODUCTION

In today's world, people are exposed to music in many ways. Even at the early age, most of the toys given to babies, play some kind of music, but that music always has a purpose. It is used to enhance emotions, for relaxation, concentration or even falling asleep. As we grow, music starts to have a different role and meaning in our lives, it becomes a background noise, a favorite song, a favorite music genre, an instrument, a concert or a memory of a certain moment in life.

Today, music is more present in our lives than ever before. Restaurants, grocery shops, shopping centers, bars, museums, art galleries, movies, TV series, news, documentaries, toys, phones... – this is just a scratch of the endless list of where we can hear a melody which will provoke a thought or inspire us, whether it is a strong need to buy more clothes or to feel sorry for a character in a movie being watched. Music has been known for having a great impact on society. Through-out the centuries cultural movements and sub-cultures evolved from music and friendships were made. That is what makes music undoubtedly one of the strongest instruments in shaping society. But is it used in the same way and in the same amount when it comes to education? Almost every educated person was exposed to music in education, at least through Music class. It is the teacher who sets the bar on how much music will be used in the classroom and how it will be used. With that being said, if we leave out the curriculum, the integration of music in teaching process is mainly dependent on teacher's will and creativity.

2. THE HISTORY OF MUSIC

History places certain events in time to better understand the process of evolution throughout the centuries. In order to better understand the matter of this thesis, a historical overview of music and its transmission will be given in the following paragraphs.

2.1. Music

The first musical instrument discovered was the “Neanderthal flute” which was used by Neanderthals, which are our closest human relatives. The flute was made from animal bone, which had holes, functioning on the same principles as nowadays flutes do. What makes this instrument so special is not only that it is around 60 000 years old, but that it has holes which make musical intervals very similar to the ones we have today (Fink, 1997).

A musical interval is formed when two notes are relatively regarded to each other, and they can be either consonant or dissonant. A consonant interval is pleasant to our ear and dissonant interval is not. The one thing they have in common is that they form every single musical piece that was ever made. The person who discovered the musical interval 2 500 years ago, through series of experiments and mathematical equations, was Pythagoras of Samos (circa 570-495 BC), Greek philosopher also known for numerous other theorems and teachings such as Pythagoras’ Theorem which is taught throughout the world (Bosanquet, 1876).

It is important to understand that the musical interval is “foundation” of music, because there would not be a music melody since it is a difference in pitch between two sounds and music is a combination of sounds. Moreover, there is one more element which for the first time appeared in the second quarter of the ninth century, that bears a great importance in the evolution of music and that element is “musical notation”. In music theory, musical notation is described as a series of symbols and markings that inform musicians how to perform a musical piece. Without musical notation we would not know what kind of music was played and sang 900 years or 100 years ago. Prior to the invention of the musical notation system, all the cultures preserved and transmitted their music from mouth to ear and ear to mouth (Rankin, 2018).

Because of the mentioned transmission form, there were many alterations and deviances from the original form which occurred with the passage of time.

The first recorded music was sold in the USA in 1890. It was recorded with the phonograph, which is the first recording device. The device was invented by Thomas Alva Edison in 1877 and immediately started a revolution in sound and music transmission and maintained its importance until 1945. The notation system however remains the only reason why orchestras, choirs and individuals are able to reproduce music and audiences can listen to the music that was written in the past, long before recording became possible (Howland Kenney, 1999).

2.2. Evolution of music transmission

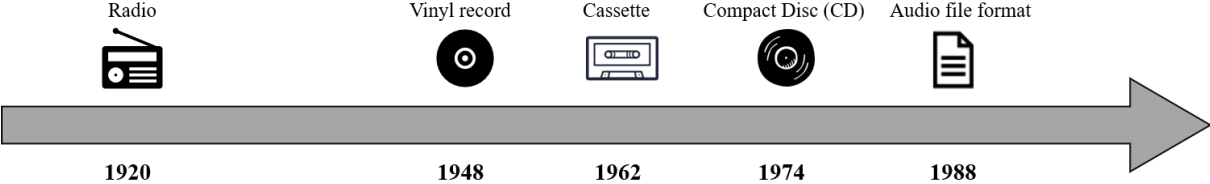
Even though the phonograph was mentioned in the previous section as the main breaking point in music transmission, it is important to mention other forms of music transmission in order to realize how easily accessible music is today. The first commercial radio broadcast occurred in 1920s and the radio remained one of the biggest media up to now. News, interviews, commercials, sports, music or even radio drama, are just a scratch of what one has been able to hear on radio stations for more than 100 years and presently. for a hundred years now (Slotten, 2000).

According to the Nielsen Total Audience Report from February 2020, radio is USA's number one reach medium with 92% of audience reach each week. This means that each week 92% of Americans who are eighteen and older, listen to radio in some way (Nielsen, 2020).

During the expansion of radio broadcast since 1933, Columbia Records introduced the first 12" Long Play (LP) vinyl record in 1948, which enabled selecting music according to listener's preferences. What is more, it brought music into people's houses throughout the next decades (Osborne, 2016).

As the need for music consumption increased over the years, many companies searched for new ways of making music available to consumers and as a result Philips introduced the first cassette in 1963 (Burr, 2020). A more portable and easier way for people to stock their own favorite music became a strong competitor to vinyl records. But Philips did not stop there and in 1974 they began to develop the Compact Disc (CD) which further popularized music consumption. Finally, in 1988, data file was invented. Files like .mp3, .mp4, .wav and Free Lossless Audio Codec (FLAC) are audio file formats which can be found on almost every

computer, mobile phone, internet and all streaming services. Because of that, music is now available to every person no matter the age (Wikipedia, 2020).



Picture 1. Music transmission timeline

3. MUSIC IN EDUCATION

According to Cambridge English Dictionary, education is *the process of teaching or learning, especially in a school or college* (Cambridge Dictionary, 2020).

The overview of the history of music in the previous chapters showed that music was closely related to education (Pythagoras, paragraph 2.1. Music). Even though music evolved long before we know education in the contemporary sense, music education is mainly responsible for its form today. Teachers, music teachers, musicologists, and professional musicians bear a significant role in its spread and acknowledgement. The following paragraphs will enclose music in education and creativity as a skill in teaching.

3.1. Music education

Music education which implies learning music and learning about music, provides an insight into what music is, with all the other information that is related to music, such as music history music culture and music appreciation and sensitivity. Countries differ with respect to their music culture, and even though they share the same airplay of popular music to which the majority of people are being exposed to nowadays, it is the difference in music education that makes the difference in people's knowledge about music. According to the National curriculum in England,

Music is a universal language that embodies one of the highest forms of creativity. A high-quality music education should engage and inspire pupils to develop a love of music and their talent as musicians, and so increase their self-confidence, creativity and sense of achievement. As pupils progress, they should develop a critical engagement with music, allowing them to compose, and to listen with discrimination to the best in the musical canon” (National Curriculum in England, 2020).

Curricula of music education also contain aims. For the purpose of this thesis the aims of two curricula will be compared. For this comparison the National Curriculum in England (2020) and National Curriculum in Croatia will be used in the following table (Narodne novine, 2020).

Table 1: Aims of music education in national curriculum in Croatia and national curriculum in England

Curriculum	Aims
<p>National curriculum in Croatia</p>	<p>Educational aims of teaching music:</p> <ul style="list-style-type: none"> ❖ Enable social and emotional development of all students including gifted students and students with disability. ❖ Encourage development of music skills for all students in accordance with their individual abilities. ❖ Encourage active involvement of students in music and their cultural community. ❖ Introduce music art to students with quality and representative music accomplishments of different origin, style and type of music. ❖ Encourage the development of musical taste and critical thought. ❖ Encourage the understanding of interdisciplinary characteristics and possibilities of music. ❖ Raise awareness of regional, national and European cultural heritage in context of world culture. ❖ Develop cultural understanding and intercultural competences towards domestic music culture and open-minded approach towards other music cultures.
<p>National curriculum in England</p>	<p>The national curriculum for music aims to ensure that all pupils:</p> <ul style="list-style-type: none"> ❖ Perform, listen to, review and evaluate music across a range of historical periods, genres, styles and traditions, including the works of the great composers and musicians. ❖ Learn to sing and to use their voices, to create and compose music on their own and with others, have the opportunity to

	<p>learn a musical instrument, use technology appropriately and have the opportunity to progress to the next level of musical excellence.</p> <ul style="list-style-type: none"> ❖ Understand and explore how music is created, produced and communicated, including through the inter-related dimensions: pitch, duration, dynamics, tempo, timbre, texture, structure and appropriate musical notations.
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As presented in Table 1, different approaches on music education, here shown through aims, also result with different learning outcomes. England’s aims show more diverse and specific expectations while Croatia’s aims show more general explanation of what should be achieved through study of music. National curriculum in England states that all pupils “have the opportunity to use musical instrument” and “learn to sing and to use their voices”, meanwhile there is no mention of singing and musical instrument usage in Croatia’s curriculum.

The example of different aims in two countries shows different approach on music education and therefore its strengths and weaknesses are mainly dependent on country’s curriculum and the team of experts who make it. However, music culture of schooling country also depends on how music will be implemented in its education.

3.2. Creativity in teaching

American psychologist Robert Sternberg (1999) states that creativity is a decision to buy low and sell high in the world of ideas. When it comes to teaching, it is often described as performance, and according to Pineau (1994) every classroom is a space for performance. In general, performance can be good, bad and satisfying. What makes a good performance memorable and interesting depends on the audience and its expectations. However, a performer can surprise the audience with something that was not predictable, and that can affect audience’s attention. Moreover, a good performance requires a certain level of matter knowledge, whether it is a script, a musical piece or a joke, however improvisation and modification depending on the situation are also respectable skills. Expression, gesture or stance can make a remarkable difference on performer’s impact on the audience, as well as knowing

how to maintain the attention of the listener or viewer. All of this can be transferred to teaching if the teacher is the performer, pupils are the audience and classroom is the stage.

According to Cambridge Dictionary, creativity is “the ability to produce or use original and unusual ideas” (Cambridge Dictionary, 2020).

Therefore, a creative teacher is the one who can use original and unusual ideas in the process of teaching. Creativity is not reserved for painters, actors, musicians or writers only, it is a skill that can be used in every aspect of life. A survey in 2010 conducted by IBM, found that around 1500 executives rated creativity as most desirable business skill in the modern world (IBM 2010 Global CEO Study, 2020).

Teachers can be creative and improve their teaching with it but it is also important to nurture students’ creativity in their learning process and maintain respectable and trustful atmosphere in the classroom.

3.2.1. Classrom and resources vs. Creativity

Classroom as teacher’s *performance space* according to Pineau (1994) can affect creativity, it can boost it, and make it easier and more natural. Not every teacher can ask for a classroom that will suit the needs for a creative atmosphere. Therefore, it is the teacher who can transform the classroom into a creative environment. Adding colors, posters, carpets and books to the classroom can boost creativity while teaching.

Both students and the teacher make up a very important ingredient in nurturing teaching and learning process creativity. If a student responds well to teacher’s creative ways of teaching, it is more likely the teacher will try to implement creative ways of teaching in his teaching style. Students are often afraid to make mistakes in front of other students and the teacher mainly because of the stereotype that mistakes are bad. A study about coping with achievement-related failure by Altermat and Broady (2007) states that children who receive poor grades and encounter problems with homework describe that as their daily most common distressing events. Furthermore, the study shows that children who get negative reactions from their friends or who do not get help from friends are more likely to stop solving problems (Altermatt & Broady, 2007).

Mistakes are good if they lead to something new. They provide for, another way of explanation or another way of solving a problem. Therefore, it is necessary to build an environment of acceptance and help in the classroom.

School resources can be another obstacle in being a creative teacher. Some schools in Croatia for example, still do not have LCD projector in the classroom and some do not have audio reproduction devices, which can reduce the possibility of using interactive tools and music. This is where the teacher's creativity and improvisation come into the spotlight. Bringing what is missing from home depends on whether it is in teacher's possession, but if that is not something teacher can offer, finding an alternative way is indicator of creativity as well. As music is the topic, it can be taken for an example. If there is no audio device to play music in a classroom, singing can be an alternative way to implement music and use it in a creative way. It can be used in any class as form of music integration in classes other than music.

3.2.2. Creative use of music in other subject areas

Using music in lessons can certainly be a way of making a significant difference in teacher's teaching style. It can be used in various ways not only for the music class, but also for all the other classes. Background music can be used for better focus while solving mathematics tasks, but also for relaxation while painting in arts class.

Song at the start of the day can mark that learning process will begin and pupils will have a certain amount of time to prepare for it.

Learning can become a fun experience if it is introduced through making a song about a certain topic after knowing some facts, dance can be a way of pause from learning and stress relief. Possibilities of music usage in the classroom are mainly dependent on teacher's creativity, knowledge and resources.

4. MUSIC AND LANGUAGE LEARNING

Learning English and music are interconnected mainly because the English language is often learned through songs, in order to practice and learn new sounds and words. In the following sections music and its relation to English language learning will be enclosed.

4.1. Music and the brain

French scientist Pierre Paul Broca (1824 - 1880) discovered that syntax of language is processed in the left part of the left frontal hemisphere of the brain which was later also discovered as an area in which music syntax was processed. Researchers later discovered that the same area reacted to dissonant music the same way as it reacted to ungrammatical sentences and that area of the brain was named Broca's area (Maes, Koelsch, Gunter & Friederici, 2001).

Music's brain stimulation has a significant role in language learning as music also stimulates other brain parts as well. As stated in the book by Clynes (1982), right hemisphere of the brain is responsible for musical information processing, which has a different role in person's experience of listening music, such as tempo, key and overall feelings that music creates. Therefore, happier and more up-tempo music will create numerous other stimulations which could enhance learning and overall interest in listening and processing language matter as well as improve class atmosphere and productivity (Clynes, 1982).

4.2. Music and English as a foreign language

Besides the music that is provided in textbooks teacher can always introduce more music to learners but also engage them to explore music and do their own research about it.

The following list contains ten ideas of how to integrate music in teaching English as a foreign language teaching process and its impact on learning will be introduced.

1. Research a favorite artist – giving learners a chance to research something they like will likely engage them in a task more than if their opinion about something is opposite. Reading articles and biographies and writing about the information that is obtained will be a good practice for reading comprehension as well as writing and speaking when

presenting the results of the research. Moreover, it will expand a learner's trivial knowledge.

2. Favorite chorus – giving learners a task to think about their favorite song chorus and analyze its meaning will help in critical thought development as well as reading comprehension. Adding singing to this task will integrate music education to it as much as adding recitation of the chorus' lyrics will provide pronunciation and reading practice.
3. Favorite music playlist – learners can create their own favorite playlist which can be played during writing task or introduced to other learners by presentation. Each learner would make a playlist of his 5 favorite songs and bring them to class. This task can help in learner's musical taste expansion, critical thought development and listening comprehension.
4. Favorite music instrument – a research and brief information about learner's favorite instrument will help in expanding the vocabulary by learning the names of various instruments as well as writing and listening practice when it is researched and presented. Description of how the instrument is made, for what type of music is it used, and it is learners favorite, can help in shaping research. If learner has instrument at home, it can be brought to the class and explored by other learners.
5. English lesson start song – choosing a song that will mark the start of the English lesson can help learners prepare for the lesson as well as introduce voting and critical thought development.
6. Favorite music video – engaging learners in research of their favorite music video and describing it briefly will enhance learners critical thinking and describing skills as well as writing skills and technology usage.
7. Song lyrics analysis – reading and analyzing the lyrics of a popular song can improve reading comprehension as well as learner's freedom of expression and vocabulary expansion.
8. Popular music culture in England – introducing famous English artists and playing their music will expand learner's knowledge about English culture and history. Also, learners can be asked to do a research about most influential artists in England.
9. Translating song lyrics – Translating a popular song lyric to learner's native language can improve learner's vocabulary and translation skills.

10. Research about favorite musical genre – exploring different music genres could develop learners critical-thought and history knowledge as well as provide reading and reading comprehension practice.

These ten ideas can be used in various ways and it is on the teacher to responsibly implement them in English as foreign language teaching and learning process. Moreover, all of the ideas provided can be integrated into other subject classes and modified depending on their educational purpose.

4.3. Internet resources content quality

Music is useful to those who are learning a new language, especially when that language is English. There are many resources which can provide a learning methodology that is based on music. It is important to review the sources and explore the resources they offer. Quality of content can vary on many pages and that is why it is crucial to be familiar with the content. To explore the problem of content quality two videos of currently popular educational song *Baby Shark* will be used for comparison.

As briefly described in Table 2 below, two videos have a lot of common features, but when being played, those two videos become two opposite things. It is immediately hearable that Video 1 has faster tempo music which is more cheerful and more engaging while Video 2 has a slow-paced tempo (See chapter 4.1). Video 2 has animated choreographers which do not open their mouth when singing while in Video 1 real children actors sing and do the choreography of the song in real-time. Compared to Video 1, Video 2 is overall darker According to the study about children's emotional associations with colors, where sixty children needed to express their emotions based on the color brightness, children react more positively to brighter colors (Boyatzis & Varghese, 1994). A lot of different content can be found for just one song, and it is important to watch it and hear it before it is played to learners. To enclose how big children entertainment business on internet is, Pinkfong (Table 2, Video 1 creator) has a net worth of 55 million dollars with 28.8 million subscribers and 12 billion views on YouTube (Statsmash, 2020), while Cocomelon (Table 2, Video 2 creator) has a net worth of 317 million with 50 billion views and 71.9 million subscribers on YouTube (Statsmash, 2020).

Table 2: Baby Shark, YouTube video quality comparison

Name for comparison	1 st video	2 nd video
Name of the video	Baby Shark Dance Sing and Dance! @Baby Shark Official PINKFONG Songs for Children	Baby Shark CoComelon Nursery Rhymes & Kids Songs
Video Uniform Resource Locator	https://youtu.be/XqZsoesa55w	https://youtu.be/020g-0hhCAU
Name of YouTube channel	Pinkfong! Kids' Songs & Stories	Cocomelon – Nursery Rhymes
Video description	Children actors demonstrate choreography for the specific song, while two-dimensional animated video of sharks is being played in the background.	Animated children and adults demonstrate the choreography for the specific song, while three-dimensional video of is being played in the background.
Audio description	Good quality, fast-tempo music with real instruments with children and adults singing.	Low audio quality, slow-tempo monophonic music with children and adults singing.

**Video
screenshot**



5. USE OF AUDIO RECORDING TECHNOLOGY IN EDUCATION

According to Berg (2018) sound recording is

transcription of vibrations in air that are perceptible as sound onto a storage medium, such as a phonograph (see paragraph 2.1) disc. In sound reproduction the process is reversed so that the variations stored on the medium are converted back into sound waves. The three principal media that have been developed for sound recording and reproduction are the mechanical (phonographic disc), magnetic (audiotape), and optical (digital compact disc) systems (see paragraph 2.2.).

Digital audio recording, according to Collins Dictionary, is a process of sound to numbers conversion. Every smartphone has the option of sound recording as well as every device with the microphone integrated in it. User can use that option for music recording, interview or even event log. If the user wants to edit the audio file got by digital sound recording process, owning a Digital Audio Workstation (DAW) will emerge as the professional tool to use for it (Savage, Johnson & Fergusson, 2011). Furthermore, if a good quality audio is needed, user will need to use a microphone, cable and audio interface which converts sound from analog to digital and DAW is storing it on a computer hard drive. The common name for all these items is audio recording equipment.

Resources in school (see paragraph 3.2.1.) however can be main obstacle of getting to use recording equipment. However, if a teacher wants to introduce usage of audio recording equipment to the school, and a school owns it or buys it, possibilities of using it become endless and depend only on teacher's imagination and creativity. Recording songs, podcasts, radio shows and poetry recitals can become a powerful teaching tool which can bring classroom and teaching creativity to the next level.

To observe the previous statement in practical use, the following sections will present the research conducted regarding the use of audio recording technology in a classroom.

6. RESEARCH METHODOLOGY

For the purpose of this thesis, mixed-methods research methodology was used. Both quantitative and qualitative research was carried out. The qualitative research was carried out in the form of a study/observation of the audio recording technology usage (Chapter 7.) whereas the quantitative research was carried out by means of a questionnaire for integration of music in teaching process (Chapter 8). The research will be presented as two separate studies which were made to gather important information from teachers as well as students who were exposed to a way of music usage in education. Both qualitative and quantitative methods were used to help gather information that is crucial to derive a final conclusion of this thesis. The first research (Chapter 7) will show descriptive results which are important to see in order to understand how learners reacted to a certain way of integrating music in education, which was audio recording technology. The second research (Chapter 8) will be presented through numbers obtained from questionnaire analysis and discussion about the results in general (Wilson & Cresswell, 1996).

6.1. STUDY OF USAGE OF AUDIO RECORDING TECHNOLOGY IN CLASSROOM

The main goal of this study was to test whether the students will positively react to a new approach on music class based creative project as well as will they find a creative way of using the audio recording technology.

6.1.1. Participants

The participants in the study were ten students from American International School of Zagreb. Of the ten primary school students five attended first grade (six years old) and five were second grade students (seven years old).

6.1.2. Research questions

- ❖ Will the students positively react to usage of audio recording equipment?
- ❖ Will the students find a creative way of audio recording technology usage?

6.1.3. Research instruments and procedure

This study was conducted as a project over a period of five days during Arts Week¹ at the American International School of Zagreb, from Monday to Friday, 180 minutes for four days, and a project presentation on Friday. After bringing and connecting the recording equipment, which consisted of a microphone, cable, audio interface, speakers and computer with DAW (see paragraph 5) installed in it, students had 30 minutes for exploring the possibilities of equipment and exploring how their voice sounds on a computer. After the exploration, students were given 30 minutes to brainstorm what could be done with the equipment and what could be recorded. After the initial brainstorm, ideas were put on the blackboard and a recording project plan was made. Students were to record different sounds which will later be edited into a rhythm-based song. The first sequence of the recording process was recording sounds in the classroom which were explored before the first recording session started. Pencils were transformed into drumsticks, tables became big drums, and paper became a shaker. After recording the first part of the song, students decided to record sounds they can produce with their mouth. It is important to mention each student recorded a sound of his choice in every session. After recording mouth sounds, students agreed to make their own drums out of cans, paper, and other materials they brought from home. When the drums were made, each student recorded their own drum sound with the help of other student pressing record button and stopping recording when needed. After drums, students made their own shakers from material they could use in the Arts classroom. When all of the shakers made, and produced a certain sound, students again recorded their sounds using DAW's basic knowledge they gained through the sessions. After everything was recorded and sound library was completed, students were asked to make a sketch of how the song would be constructed. They have agreed on making a song that would have each sound part on its own, and in the end all the sounds joined together for the final part. Editing of the audio files was the following step which meant joining sounds into a whole. After audio editing, students named the song "Arts Week Drummers" and presented their song in front of schoolteachers and students on the final day of Arts week. They explained the entire recording process and performed their song. The reception by audience

¹ Arts Week is a name of arts festival which was organized by American International School of Zagreb.

seemed to have been exceptional as they got a grand applause for their performance. for the audience, for which they got a grand applause at the end.

6.1.4. Results and discussion

This study answered previously defined research questions (*Will the students positively react to usage of audio recording equipment?; Will the students find a creative way of audio recording technology usage?*). Students positively reacted to the recording equipment and engaged in its possibilities exploration and managed to develop their own approach on song recording process. The usage of technology that was previously not known to participants clearly encouraged them to explore the possibilities of it. Putting that into the perspective, it is important to use new technologies in education because it can improve learner's overall engagement while it also improves their general knowledge about how recording process is being conducted. Students can discover how a song is recorded and that can change their opinion and overall sensitivity to music. It is important to say that during observation of the entire process, it was clear that students collaborated and creatively approached the sound recording process with their self-made instruments and sound ideas which resulted in a final product (the song) that was entirely their work and idea. Students were proud of the song and their satisfaction could have been witnessed when they presented a song in front of the entire school. It is important to nurture learner's creativity and offer different ways to express it. Recording a song is surely an interesting experience for children and because of that, it is clear that usage of audio recording technology can improve ways of making education more interesting.

Link to the song download:

https://drive.google.com/file/d/1Zb_GoF9DKgkwuUuXNirJDAGP7J5kvhZy/view?usp=sharing

6.2. INTEGRATION OF MUSIC IN THE TEACHING PROCESS IN CROATIAN SCHOOLS

This research will aim to determine how teachers use music and what is the purpose of implementing music in their teaching style and process of teaching in general. The following

quantitative research will present results and be used to derive a conclusion of this thesis (Wilson & Creswell, 1996).

6.2.1. Participants

The sample of participants for this part of the research comprised teachers in Croatia, total number of participants was 154 (N=154), of which 145 (94,2%) participants were female and 9 (5,8%) male. The most represented age group, with 47 (30,5%) participants, was 50-59 while the least represented age group was 60 and older with 7 (4,5%) participants. Most of the teachers- participants worked in public schools (96,8%) while a few were private school employees (3,2%). The teachers come from cities in Croatia of which the majority come from Zagreb, Slavonski Brod, Dubrovnik, Pula, Zadar along with others. A number of 79 (51,3%) participants worked as primary school teachers while 75 (48,7%) worked as subject area teachers in secondary school or high school teachers. Moreover, 31 participants were EFL teachers, while 46 teachers had some type of formal musical education. 20% of participants graduated from the music academy.

6.2.2. Research instruments and procedure

A questionnaire was created for the purpose of determining how teachers use music and finding the purpose behind implementing music in their teaching style and process of teaching. These answers were important for shaping the final conclusion of the thesis. The first part of the questionnaire obtained basic information about the participants. This was followed by four groups of questions listed below.

In the following list, a brief description of questions grouped under four headings is provided:

1. Music in my life – this set of questions was about participant's every-day music usage.
2. Music in the teaching process – this set of questions was about participants usage of music in teaching process
3. Music in English as foreign language class – this set of questions was for English language teachers only. Using music in English as foreign language class
4. Final thoughts – this set of questions covered participant's self-reflection on using music and comments about the research topic.

Most of the questions were obligatory while some were not.

The initial idea for obtaining information was to interview teachers at their workplace. However, due to the Corona Virus pandemic which closed schools in the period from March 2020 to May 2020 the idea was abandoned, and research was conducted by online questionnaire accessible via link. All 154 participants who worked as teachers answered the same questionnaire. All of the participants shared the same conditions while filling in the questionnaire. There was no given time restriction and questionnaire was accessible for 5 days. Participants voluntarily filled in the questionnaire which was accessible via internet link.

6.2.3. Results and discussion

The following section will provide the research results and give an analysis of the results. The structure of the results and discussion closely follows the questionnaire and headings in the questionnaire (see chapter 8.2).

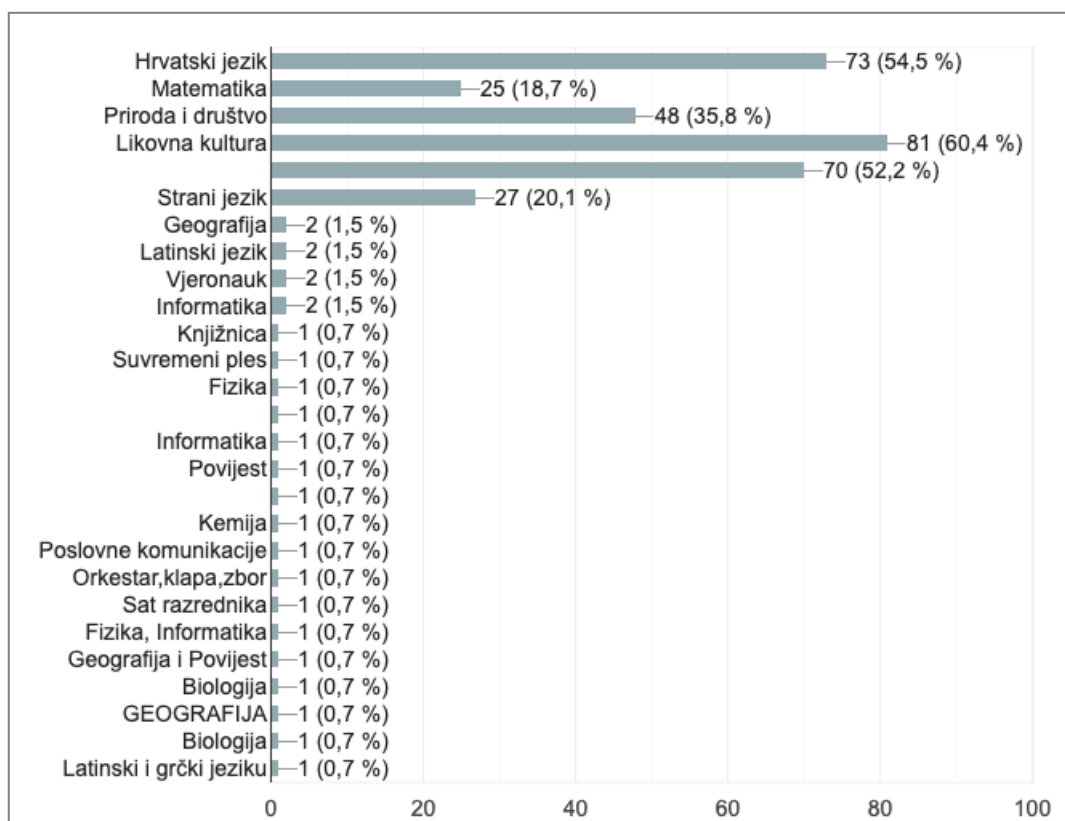
6.2.4. Music in my life

All 154 (100%) participants stated that they love listening to music and 136 (88,3%) of them listen it every day. A significant number of participants, 127 (82,5%) of them, listen to music while doing some kind of work and 148 (96,1%) participants use music for relaxation. During their education, 103 (66,9%) of teachers used music while studying. The participants were then asked to write one type/genre of music they listened to while studying. The majority of participants, 33% of them, listened to rock music, 28,2% listened to popular (pop) music while 18,4% listened to classical music. Some other music genres were also listed in smaller percentage such as jazz (1%), metal (1%) and house (1%) music and other. When asked whether music helped them in their studying and learning process, 88,6% answered it did help them. Stratton and Zalanowski (2003) conducted a research in which they discovered that studying, driving, dressing and socializing are the most common activities which are related to music listening. The majority of participants in the Stratton and Zalanowski (2003) research also preferred rock music while doing these activities, which is the same result as in the research conducted for this master thesis. Since all the age groups were represented in the master thesis research, it can be said that participants of the research preferred genre of rock music while studying.

6.2.5. Music in the teaching process

Music in teaching process is used by 134 (87%) participants and 60,4% use music even though they do not teach music class while 34,4% use music in teaching sometimes. This result was greater than expected because music usage is not required in other classes such as math. Still, participants decided to use music during teaching other classes. Being asked to write classes in which they use music (see Figure 1), Arts class was the most frequent answer (60,4%) followed by Croatian language (54,5%) and English as foreign language (52,2%). It was expected that Arts class will be the most frequent answer because usage of music during teaching Arts is described in the national curriculum in Croatia (Narodne novine, 2020) When participants were asked how do they use music in those classes various answers were given, some teachers use it for task solving in physics class, some use it while teaching about cultures, English teachers use it to practice sounds and vocabulary while most of the questioned participants use it for motivation and relaxation. Usage of music for relaxation and motivation is the easiest way of implementing music in teaching process since the only thing that needs to be done is to play a song on a device. Therefore, these results were not a surprising discovery.

Figure 1: List of classes in which participants use music



Furthermore, 52,6% of participants use music when not in class with students, some of them use music during recess, while some use it as a transition tool or to mark start of learning process, which is a result that shows this type of music usage could be more used since it offers a lot of benefits for children. A research by Dena Register (2007) discovered that music effectively helped children to transition more quickly within the organization of the school day.

Furthermore, 92,2% of participants think that students react positively to music usage in teaching process while 7,8% do not know for sure. A research by Blašković and Kuliš (2017) showed that using music in education enhances children's creativity and evokes positive reactions. Therefore, it is useful to see that participants included in this research also recognized that children positively react to using music in teaching.

When participants were asked to estimate the amount of music usage in teaching process, 84,4% said it is not used enough, 15,6% stated it is used enough and none of the participants said it is used too much.

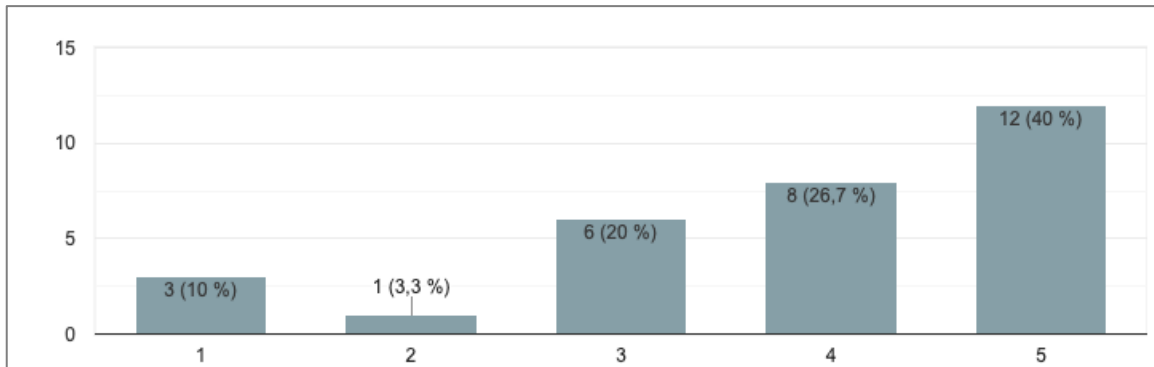
6.2.6. Music in EFL classes

For this group Likert scales were used to gather answers and scale responses to get better quality amount measures and agreement measures. For the first two questions number 1 is "never" and number 5 is "very often" while in third question number 1 is for "I entirely disagree" and number 5 is for "I entirely agree". In the following graphs answers to statements in this set of questions will be shown.

1st question: I use music in English as a foreign language class.

It is seen in the Graph 2 that 40% of teachers very often use music in an EFL class, which is a solid number since music is proven to help in language learning. Surprisingly, 10% of EFL teachers never use music in their classes, even though it needs to be used according to National curriculum in Croatia (Narodne novine, 2020). This 10% could be reduced by educating teachers more about music usage as well as inspection of their work.

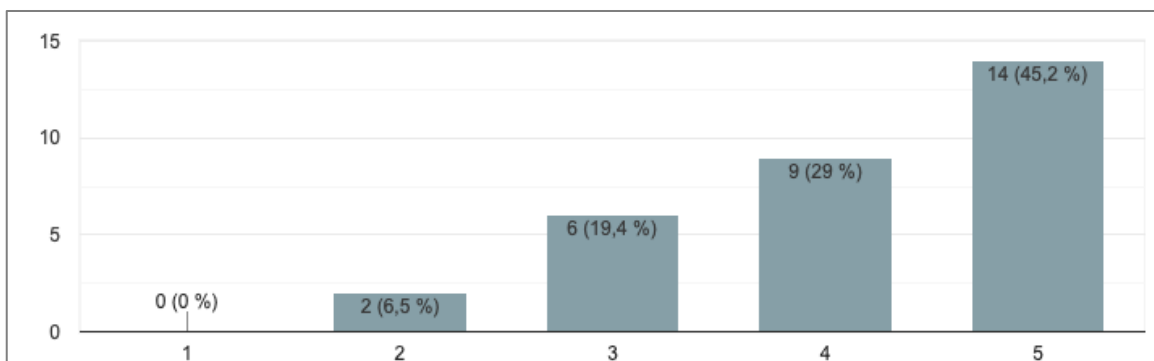
Figure 2: Answers of 1st question



2nd question: I use music which is not prescribed in teaching plan and program.

Even though 40% of teachers use music very often which is not prescribed in teaching plan and program, it is important to address that music which is used needs to be carefully picked and needs to have its purpose. Teacher needs to know why he used a specific song and what will that song improve in learning English as a foreign language. It is visible in Figure 3 that 29% of participants often use music which is not prescribed in teaching plan and program, while 19,4% use it sometimes.

Figure 3: Answers of 2nd question

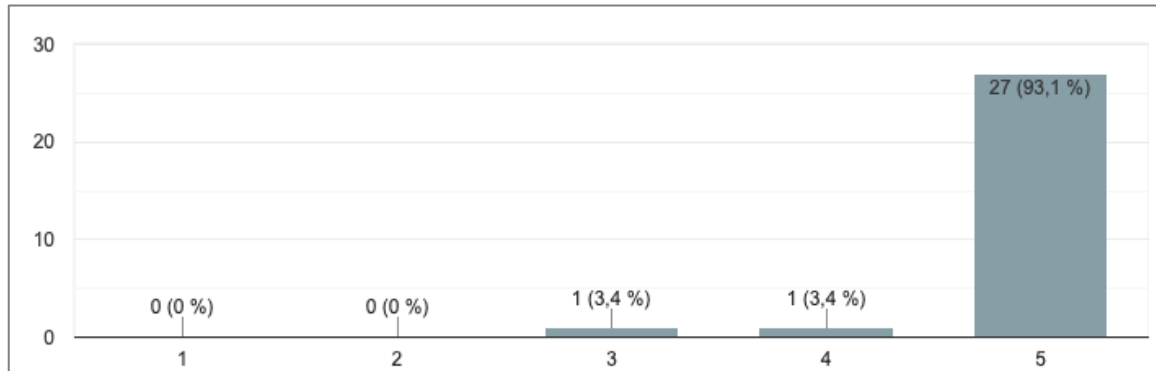


3rd question: Listening to music in English helps in English as foreign language learning.

The results in Figure 2 provided information to what extent do teachers use music while teaching English as a foreign language, while here in Figure 4, it is visible that 93,1% of them agree with the statement that listening to music helps in foreign language learning. Moreover,

3,4% neither agree nor disagree. It is interesting to see that even though teachers believe music is useful in English as a foreign language learning, not all of them use it (see Figure 2).

Figure 4: Answers of 3rd question



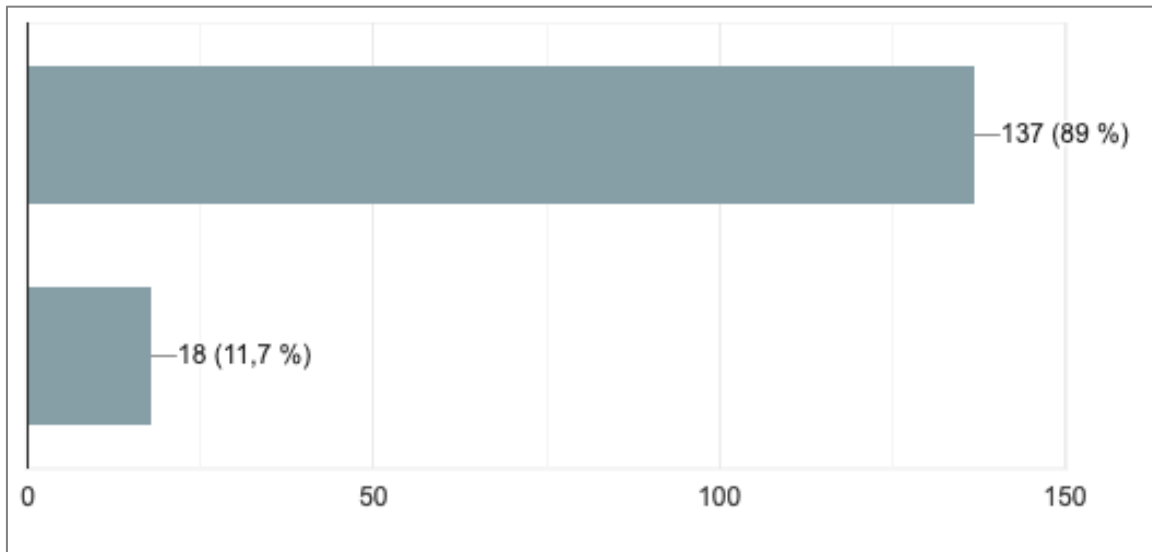
6.2.7. Final thoughts

When asked, 7,8% of participants stated they do not use music in teaching process as much as they should, while 30,5% stated they use it sufficiently. Furthermore, 66,2% of participants think that integrating music in the teaching process is important. The participants in this sample consider themselves creative users of music in the teaching process (70%) while 11% do not think they use music in a creative way and 19% do not know for sure.

Finally, 89% of the participants state that this research encouraged them to think more about how to integrate music in the teaching process (Figure 5).

Teachers in this research shown the will to reconsider their music usage in the teaching process. That reconsideration greatly depends on frequency of their music usage before they stated they will try to improve it. A teacher who was already using music will maybe add a few activities as well as the teacher who used music less frequently in their classroom or the teacher who did not use it at all. Therefore, it is important to take participant's subjective opinion and self-evaluation skills into consideration when looking at the results of this research.

Figure 5: Answer to research encouragement question



6.2.8. Participants' Comments

The participants were given a chance to express their thoughts about the research at the end of the questionnaire. Some participants loved that the questionnaire was clear and short, some said this research made them think about new ways of music integration. Furthermore, participants liked the topic of the research and stated it is important and interesting, and that can generally help in popularizing this topic and can result in more research of it.

7. CONCLUSION

This research aimed to point out the advantages of music usage in education. In order to enclose music matter to the reader, main facts about music history were introduced as well as evolution of its transmission throughout the time, to emphasize how much available music actually is nowadays.

Results obtained from this research show that a lot of teachers do use music in teaching process and children as learners show a positive reaction when music is included in their learning process. This research was born out of the idea that music should be more included in the teaching process and therefore the results obtained were surprising in a way, since it was expected that teachers do not use music in the amount the results shown.

Music is a powerful form of the art, and to acknowledge that, not much science and research is needed. It is the way it can be used in all its strength that needs to be constantly revised. Even though this thesis focused on education and teaching process, it is probably clear that all of the elements that were researched above are interchangeable. Music can help becoming more creative and creativity can lead to new acknowledgements about music, however, to do that, education is essential.

Throughout this research, a lot of information about the use and role of music in education was found, but it was also limiting in a way because it is mainly repetitive. Teacher himself is the one who will decide to which extent he will use music as teaching aid and how important it will be in teaching in general.

Audio recording technology will certainly become a new domain to research more about, and results and further studies of using it in the teaching process and education may help in its popularization of usage in education. On the other hand, limitation of this field is that usage of audio recording technology requires knowledge and experience that is not offered, which can become the biggest obstacle of its more frequent usage in teaching process.

Teachers are the ones who are essential for bringing more music into the classroom and the research results of this thesis show that it just needs to be encouraged more. More research on this topic will help in its growth, but also in its further development and appreciation.

The most important thing proven in this research was that teachers want to include music more into their teaching. If this research helped at least one of one hundred and fifty-four teachers who participated in it, or the reader of this thesis, it has fulfilled its purpose.

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9. APPENDICES

Appendices A. Questionnaire: Integration of Music in Teaching Process

Integration of Music in Teaching Process

Poštovane kolegice i kolege,

hvala Vam što ste odvojili nekoliko minuta svog vremena za sudjelovanje u istraživanju koje se provodi u svrhu izrade diplomskog rada na Učiteljskom fakultetu u Zagrebu.

Pred Vama se nalazi upitnik o korištenju glazbe u nastavnom procesu.

Molim Vas da na pitanja odgovarate spontano i iskreno. Istraživanje je u potpunosti anonimno, a prikupljeni podaci biti će korišteni isključivo u istraživačke svrhe.

Unaprijed zahvaljujem na Vašoj pomoći!

Spol: *

M

Ž

Dob: *

20-29

30-39

40-49

50-59

60+

Tip škole u kojoj radim: *

Državna škola

Privatna škola

Mjesto ili grad u kojem radite: *

Tekst kratkog odgovora

Radim kao učitelj: *

- Razredne nastave
- Predmetne nastave

Jeste li glazbeno obrazovani? *

- Da
- Ne

⋮

Ukoliko je odgovor na prethodno pitanje "Da", koji stupanj glazbenog obrazovanja ste završili?

- Osnovna glazbena škola
 - Srednja glazbena škola
 - Visoka glazbena škola / muzička akademija
 - Ostalo...
-

I. GLAZBA U MOM ŽIVOTU

Ovaj skup pitanja i tvrdnji odnosi se na Vaše korištenje glazbe u svakodnevnom životu.

Volim slušati glazbu. *

Da

Ne

Glazbu slušam svakodnevno. *

Da

Ne

Glazba mi pomaže u poslovima koje obavljam. *

Da

Ne

Glazbu koristim za opuštanje. *

Da

Ne

Tijekom svog obrazovanja, koristio/la sam glazbu tijekom učenja. *

Da

Ne

Ukoliko je odgovor na prethodno pitanje bio "Da", označite koju ste vrstu glazbe slušali:

Pop glazbu

Rock glazbu

Jazz glazbu

Klasičnu glazbu

Ostalo...

Ukoliko ste odgovarali na prethodno pitanje, je li Vam ta vrsta glazbe pomogla u procesu učenja?

Da

Ne

II. GLAZBA U NASTAVNOM PROCESU

Ovaj skup pitanja i tvrdnji odnosi se na Vaše korištenje glazbe u nastavnom procesu.

Koristim glazbu u nastavnom procesu. *

Da

Ne

Koristim glazbu iako nije sat glazbene kulture. *

- Da
- Ne
- Ponekad

Ukoliko je odgovor na prethodno pitanje bio "Da" ili "Ponekad", označite predmete u kojima koristite glazbu:

- Hrvatski jezik
- Matematika
- Priroda i društvo
- Likovna kultura
- Tjelesna i zdravstvena kultura
- Strani jezik
- Ostalo...

Koristite li glazbu izvan nastavnog sata? (na odmorima, prije početka nastave, za vrijeme ručka...)*

Da

Ne

Ukoliko je odgovor na prethodno pitanje bio "Da", kratko opišite kada ili kako.

Tekst dugog odgovora

Smatrate li da djeca pozitivno reagiraju na korištenje glazbe u nastavi? *

Da

Ne

Ne mogu procijeniti

U kojoj količini se općenito, prema Vašem mišljenju, glazba koristi u nastavnom procesu? *

Premalo se koristi

Dovoljno se koristi

Previše se koristi

III. Glazba u nastavi Engleskog jezika

Ukoliko ste učitelj engleskog jezika, odvojite minutu više i odgovorite na sljedeća pitanja.

Koristim glazbu u nastavi engleskog jezika:

	1	2	3	4	5	
Nikada	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	Vrlo često

⋮

Koristim glazbu koja nije propisana nastavnim planom i programom:

	1	2	3	4	5	
Nikada	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	Vrlo često

Smatram da slušanje glazbe na engleskom jeziku pomaže u učenju engleskog jezika.

	1	2	3	4	5	
U potpunosti se ne slažem	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	U potpunosti se slažem

IV. ZAKLJUČAK

Ovaj skup pitanja i tvrdnji odnosi se na Vaše razmišljanje nakon ispunjavanja prethodnih pitanja o korištenju glazbe u nastavnom procesu.

Smatram da dovoljno koristim glazbu u nastavnom procesu. *

	1	2	3	4	5	
Ne slažem se	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	Slažem se

Smatram da je glazba bitna u nastavnom procesu. *

	1	2	3	4	5	
Ne slažem se	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	Slažem se

Smatram da na kreativan način koristim glazbu u nastavnom procesu. *

	1	2	3	4	5	
Ne slažem se	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	Slažem se

Ovo istraživanje potaknulo me na razmišljanje o načinima kako bih više uključio/la glazbu u nastavni proces. *

Da

Ne

⋮

Ukoliko imate bilo kakav komentar ili primjedbu koja se odnosi na ovo istraživanje, navedite ih u nastavku:

Tekst dugog odgovora

Hvala Vam što ste izdvojili svoje vrijeme kako biste popunili ovaj upitnik!

Izjava o samostalnoj izradi rada

Ja, Karlo Kurtalj, student Učiteljskog fakulteta Sveučilišta u Zagrebu, izjavljujem da sam samostalno izradio diplomski rad uz uporabu navedene literature i konzultacije s mentoricom.

U Zagrebu, 21.09.2020
