

Music in the Foreign Language Classroom: How and Why?

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Abstract—Despite a positive attitude towards the use of music in the foreign language classroom, teachers rarely integrate music into their lessons. Studies suggest two main explanations for this discrepancy: a limited knowledge of adapted material and a lack of theoretical grounding to support the use of music in the foreign language classroom. This article aims at examining how and why music can be used in the foreign language classroom. The first section describes some musical methodologies frequently used for language acquisition over time and provides references to resources containing music-based exercises for foreign language learning. The second part reviews research studies about the potential benefits of music-related methodologies for language acquisition and for specific linguistic skills.

Index Terms—music, songs, foreign language teaching, methodology

I. INTRODUCTION: TEACHERS' ATTITUDE AND PRACTICE

Teachers are mostly positive about the incorporation of music in foreign language (FL) classes. In different surveys (Engh, 2013a; Jamouille, 2017; Tse, 2015), teachers mentioned that they believe music can be beneficial for foreign language acquisition, for language skills as for motivational or cultural aspects. They also indicate that it creates a good, enjoyable, relaxing atmosphere and that it lowers stress levels or affective filters. Despite this positive attitude, the use of music in the language-learning classroom appears to be rather occasional. Through an online questionnaire about the practices of foreign language teachers in 2005-2006 compared to 2013-2014, Ludke & Morgan (forthcoming) examined if the increased scientific interest in research about music and FL learning has been reflected in the extent and the ways teachers from different countries use music in the classroom. They reported that the actual use of music has not notably changed between the two periods and that songs were mainly used with young beginners. This was also stated by Jamouille (2017) who examined the incorporation of music in English classrooms in Brussels Secondary French-speaking schools. From a sample of 54 teachers, she found that music was not often incorporated in the English classroom and that, if it was, music was mostly used as a fun activity.

Two main reasons could explain 'the lack of crossover between stated teacher attitudes and stated teacher present classroom practice' (Engh, 2013a). First, adequate material is not always easy to find. In his paper, Tse (2015, p. 88) mentions that more than 60% of the surveyed teachers (N=60) claim that they 'do not have enough resources', that 'there are inadequate song materials', and that they 'find it arduous to find suitable songs for classroom use' (Tse, 2015, p.88). Creating new musical material can however be very challenging for teachers (Engh, 2013): lyrics of existing songs are not always appropriate, developing materials requires additional preparation time and leading singing, creating music or encouraging students to sing are for some teachers not so comfortable. Secondly, teachers sometimes lack theoretical grounding that could help guide the decision to use music in the classroom. In this regard, Engh (2013b) states that:

[...] while many teachers intuitively felt music was beneficial in teaching English language, there was also the perception that there was a lack of understanding of the theoretical underpinnings that supported such a choice. Therefore, some educators felt unable to defend the decision to champion use of music in the classroom to administrators, business English students or those in a predominantly exam focused environment (p.113).

All in all, teachers seem to be positive about the use of music in the FL classroom, but the incorporation appears rather occasional. A lack of resources and a lack of theoretical grounding could explain this discrepancy. In order to remedy this scarcity of information, this paper aims to state *how* music can be used in the FL classroom by describing some methods and by giving some resources, and *why* music can benefit foreign language learning by reviewing research about the impact of music-related methods on FL acquisition

II. HOW CAN MUSIC BE USED IN THE FL CLASSROOM? SOME METHODS AND RESOURCES

When we review the literature about the use of music in the FL classroom, it appears that music-related teaching methods can be classified in three main categories: the use of music without lyrics (sounds or background music), the use of songs and the use of rhythmical activities. The following section gives a short description of these different approaches, and provides references to resources containing exercises to use these music-related methods in the FL classroom.

A. Sounds and Background Music

Different linguists and researchers have advocated that listening to non-linguistic sounds or having background music during a task could enhance performance, among others at the linguistic level.

In Tomatis' methods, active listening to sounds is supposed to train the ear to perceive specific frequencies. Alfred Tomatis, an otolaryngologist, stated that 'the voice only contains what the ear hears' (Tomatis, 1991, p. 210), which implies that one can only vocally reproduce what one can hear. For Tomatis, this is also relevant for the perception of foreign languages: he claims that languages have different frequency ranges, which makes the perception and production of a language with a large frequency range impossible for a native speaker of a language with a short frequency range (Tomatis, 1991, p. 129-137). In order to establish or re-establish the full potential of the human ear, he developed the 'Electronic Ear'. With this ear, participants can hear music (often Mozart) or speech, whose sound has been modified to train the ear to correctly hear sound, in particular high-frequency sounds. Thanks to the listening to modified sounds and classical music, 'the adult learner recovers the ear s/he possessed in childhood and is able to hear correctly the appropriate foreign-language sounds' (Brancroft, 1999, p. 212). This methodology has also been used in other fields than foreign language acquisition (e.g. to treat dyslexia, autism, motor or attention disorders), has often been criticized, and has been subjected to many meta-analyses (Corbett, Shickman, & Ferrer, 2008; Gilmor, 1999).

Besides this active listening to specific sounds, non-lyrical music has been played in the background to improve language skills. In the late 1960s, Lozanov (1978) developed the *Suggestopedia methodology* which made use of classical music in order to relax the student's state of mind and make the brain more receptive to learning: while the teacher reads, music – often baroque – was played in the background (Brancroft, 1999; Lozanov, 1978). In the 1990s, the popular media widely spread the 'Mozart Effect': listening to Mozart would make you smarter. This popular belief derives mainly from a scientific study which tested the effect of listening to music on IQ spatial reasoning tasks (Rauscher, Shaw, & Ky, 1993). Participants were given three sets of IQ spatial reasoning tasks, each preceded by either listening to Mozart, or to a relaxation tape or to silence. Results showed that participants 'performed better on the abstract/spatial reasoning tests after listening to Mozart than after listening to either the relaxation tape or to nothing' (Rauscher et al., 1993, p. 611). Journalists reported these results stating that 'listening to Mozart actually makes you smarter' (Ross, 1994). This popular misinterpretation led to many new studies on the impact of Mozart or other instrumental music on cognitive tasks. Even if there is little evidence left for a specific performance-enhancing Mozart effect (Pietschnig, Voracek, & Formann (2010), Steele, Bass, & Crook (1999), Thompson, Schellenberg, & Husain (2001)), background instrumental music, in general, seems to affect learning (e.g. foreign language vocabulary (de Groot, 2006)). Today, thanks to the new imaging technology, researchers can anatomically analyze whether background music can improve abilities and which specific process is affected and how. With this objective in mind, Ferreri, Aucouturier, Muthalib, Bigand, & Bugaiska (2013) examined the neurological process when background music is played during the encoding of a verbal memory task. Music facilitated the retrieval of the encoded material and results suggest that the dorsolateral prefrontal cortex (DLPFC), a region known to be usually crucial during memory encoding processes, was deactivated during word encoding in the musical context, and that music helps verbal encoding by facilitating associative and organizational processes.

B. Songs

Another and more frequent way of integrating music into the foreign language classroom is the use of songs. This utilization has evolved over time to become a multi-level and multi-skills methodology. From the 1950s through the 1970s, songs were sometimes used with the *Audiolingual Method*, which is an 'approach in the teaching of foreign languages based on a system of drills in which the student repeats or adapts model sentences delivered orally or played aloud by the teacher' (Oxford English Dictionary). In this approach, singing songs made the repetitive drills possible, since songs contain redundancy, and at the same time reduced the boredom of this drill method (Kanel, 2000). When some language teaching approaches became more pervasive, such as the *communicative language teaching* and the *task-based language teaching*, 'there was a sudden demand for pedagogical material for the use of songs in the language-learning classroom' (Engh, 2013b, p. 113). Different teachers developed their own FL teaching approaches including songs, such as the *Contemporary Music Approach* of Anton (1990), which uses songs to train grammar skills or the *Melodic Approach* of Mora (2000), which uses songs and melodic emphasis on language. Except for these specific methodologies, songs can be used in many different ways in the FL classroom, whether using the song as such, the context, the singer, etc.

C. Rhythmical Activities

Teachers sometimes intuitively use music-teaching methods to train oral FL production. For example, they clap their hands to emphasize the rhythm of the speech, they make gestures that illustrate the speech intonation, they annotate written sentences to indicate the position of the stress as in a music score, etc. Some of these intuitive rhythmical activities have been formalized. For example, Graham (1993), an English teacher, linked the rhythms of spoken American English to the rhythms of traditional American jazz, creating the *Jazz Chants*. These chants are rhythmic presentations of natural American English that emphasize natural stress and intonation. The same kind of rhythmic presentation exists for Dutch, with the *Taalriedels* (Deen, Van Veen, & Schutte, 2014) or *Taalraps* (Verboog & Ader,

2016), short rap-songs with useful everyday language. In French, Llorca (2008) developed a similar method in her *Ritmimot*, which emphasizes French rhythm and prosody.

D. Useful References with Music-based Exercises for FL Classes

Table 1 lists references to different resources that contain exercises using music or rhythm for foreign language teaching. The table mentions the kind of resources (e.g. book, article, website...), gives a short description of the resource, and details the target language, the skills and the level of the resource.

TABLE I
REFERENCES TO RESOURCES CONTAINING EXERCISES USING MUSIC FOR FOREIGN LANGUAGE TEACHING

	Reference	Kind of resource	Short description	Target language	Skills	Level
Background music or songs	Griffee (1992)	Book	Description of activities using songs or instrumental music to learn a foreign language	English	Vocabulary, listening, writing	Varia
	Murphey (1992)	Book	Description of 85 activities about songs. Section 'Just music' describes activities with background music	English, but can be used for other languages	Varia	Low to advanced
Songs	Arnold & Herrick (2016)	Book	Collection of 101 adaptable activities	English	Reading, writing, listening, speaking, grammar, vocabulary, cultural exploration	Varia
	British Council – Songs for kids https://learnenglishkids.britishcouncil.org/en/songs	Website	Animated and subtitled songs with activities	English	Varia	Children
	de Vries & van Loo (2004)	Book	Songs written for FL learners, with typical structures, collocations, intonation patterns. The book contains different exercises using the songs	Dutch	Varia	Mainly beginners
	Génération française https://www.leplaisirdapprendre.com/portfolio/c-hansons-generation-francaise	Website	17 pedagogical forms, each based on a popular French song	French	Varia	A2-C1
	Lennaert & de Bonski's http://www.bonski.be/	Book & CD	Songs written for FL learners. Each song is accompanied by specific pronunciation exercises	Dutch	Pronunciation/ prosody	A1/B1
	Lorenzutti (2014)	Journal article	Description of 7 activities using authentic songs	Varia	Varia	Varia
	Ludke (2009)	Workbook, online available	10 lessons using authentic songs, each focusing on one specific skill	French, but can be used for other languages	Reading, writing, listening; speaking; vocabulary; pronunciation; grammar; culture	Varia
	Lyrics Training lyricstraining.com	Website/ App	Fill-in exercises with songs	Varia	Varia	Low to advanced
	Mishan (2005)	Book	Book about the use of authentic material in the FL classroom. One chapter is about music and contains theory, followed by some exercises (pp. 207-2013)	English, but can be used for other languages	Varia	Varia
	Tefl Tunes https://teftunes.com	Website	Ready made ESL song lessons (! some are not free)	English	Varia	Low to advanced
Rhythmical activities	Briet, Collige, & Rassart (2014)	Book	Theory about pronunciation, followed by pedagogical forms using rhythmic and music-related activities	French	Speaking (prosody/ consonants/ vowels)	A1-B2

Deen, Van Veen, & Schutte (2014)	Book & CD	Rap songs with typical sentences about many topics	Dutch	Pronunciation & vocabulary (phrases)	Low to advanced
Graham (1993)	Book	Rhythmic presentation of American English	English	Pronunciation	Varia
Lorca, R. https://www.youtube.com/user/rlorca100	Online video's with games	Video's explaining short games using gestures and voice about the rhythm of French	French	Pronunciation, intonation	Beginners
Verboog & Ader (2016)	Book & CD	60 rap songs about specific topics. Each song is accompanied by an activity (speaking, writing, grammar...)	Dutch	Mainly pronunciation (phonemes/intonation), but also grammar	Low to advanced

III. WHY SHOULD MUSIC BE USED IN THE FL CLASSROOM? BENEFITS OF MUSIC USE ON FOREIGN LANGUAGE ACQUISITION

Besides a lack of resources, teachers seem also to need some theoretical grounding about the effect of musical methodology on FL acquisition. Research reveals that music can be beneficial for foreign language acquisition, both for specific linguistic skills (e.g. vocabulary, listening skills or pronunciation) as for more general aspects, such as motivation or attention.

A. Non-linguistic Aspects

Several factors have been stated to influence (language) learning, such as motivation (R. C. Gardner & Lambert, 1972), anxiety (Horwitz, Horwitz, and Cope, 1986), personality (Gardner, 1983), etc. The use of music can have an impact on many of these factors, which will in turn affect foreign language acquisition.

According to Mora (2000), one non-linguistic benefit of using music in the classroom concerns the learning styles. As Gardner (1983) pointed out, there exist multiple intelligences: people have different types of intelligences and learn in different ways. In this context, the teacher should vary activities to develop the different intelligences. Using songs makes it possible to address the musical intelligence. Second, using music can reduce foreign language anxiety. It is a proven fact that a feeling of nervousness or apprehension in learning a foreign language is linked with poor foreign language performance (MacIntyre & Gardner, 1991). Dolean & Dolean (2014) and Dolean (2016) analyzed the impact of using songs on foreign language anxiety. They concluded that teaching with songs decreased foreign language anxiety, especially for students with rather high anxiety. As Engh (2013) mentions, 'music lowers affective barriers and assists in making students more relaxed, thereby more receptive to language learning' (p. 117). Third, music in the classroom can increase motivation. Since 'authentic materials are a motivating force for learners' (Gilmore, 2007), music, which is an authentic activity, and songs, which use authentic texts and language of native speakers, can support the motivating factor (Mishan, 2005). Fourth, the use of music can sustain attention: Wolfe & Noguchi (2009) observed that the participants in their study were more attentive, focused and engaged when listening to a musical story compared to a spoken story. Finally, the use of music and songs in the FL teaching methods provides cultural knowledge of the target language: the context, the singer, the musical style, etc. are culturally rich resources for language lessons.

B. Linguistic Aspects

Many studies examined the potential benefit of music-based FL materials on different language skills, such as vocabulary acquisition, listening comprehension, writing skills or phonetic acquisition. The following section reviews the main results.

1. Vocabulary

The potential effect of musical FL teaching methodology on vocabulary recall has been analyzed in several studies. Results are given for the three main approaches, namely music in the background, songs and rhythmical activities.

De Groot (2006) analyzed the effect of background music on vocabulary recall. 36 university students were presented several times L1 – FL pairs of words, followed by different vocabulary recall tests. Half of the students learned the pairs in silence and the other half learned while a Bach's concerto played in the background. Recall scores were higher for the musical condition compared to the silent condition.

Concerning the use of songs in the FL classroom, Murphey (1990) argues that songs could help to easily remember vocabulary or phrases: this author stated that the 'involuntary mental rehearsal' (i.e. a 'phenomenon occurring after a period of contact with a foreign language in which the new information repeats without the speaker's intentional effort' (Salcedo, 2010, p. 22) exists - and is even stronger - with songs. He argues that the rehearsal of language from music, the *Song Stuck in My Head Phenomenon*, may be triggered with a much smaller amount of input time. Different class intervention experiments confirm this phenomenon. In Medina (1990), participants having heard a sung story obtain higher scores on a multiple choice vocabulary test than participants who heard a spoken story. Similar results were found by Salcedo (2010) who observed that text recall was better when students heard a recorded song, than when

students heard a recorded spoken version of the song. Legg (2009) tested the impact of the song on text recall through an active production of the students: participants had either to rehearse and perform a musical version of a poem or either to answer questions and play memory games. Results show that the students in the musical condition obtain higher results on a translation task than the students in the non-musical situation. However, contradictory evidence was found in other studies. In order to examine word recall in the mother tongue, Racette & Peretz (2007) tested university students in three conditions: either they heard the song and they repeated singing, either they heard the song and they repeated speaking, either they heard the spoken lyrics and they repeated speaking. Unexpectedly, participants recalled fewer words when singing than when speaking, whereas the presentation mode (song or spoken lyrics) had no influence on lyric recall. The authors concluded that 'the best strategy for learning song lyrics is to ignore the melody. The melody seems to interfere rather than facilitate word recall in songs [...]' (Racette & Peretz, 2007, p. 250). As Ludke, Ferreira, & Overy (2014) write 'one possible explanation for this unexpected result is that the folk songs used by Racette and Peretz had complex, nonrepetitive melodic lines' (p.43). Furthermore, a non-beneficial effect of songs was also found by Kilgour et al. (2000). They tested lyrics recall with sung lyrics and spoken lyrics. They first observed better recall with the sung than with the spoken version. In a second experiment, they manipulated the presentation rate, so that the duration of the sung and the spoken versions were identical. They found that with an equal presentation rate, there was no advantage for sung over spoken lyrics and suggested that '[P]revious findings of melody's aiding text recall may be attributed to presentation rate' (Kilgour et al., 2000, p. 700).

Regarding the impact of rhythmic activities, the experimental study of Ludke, Ferreira, & Overy (2014) gives interesting results. They analyzed vocabulary learning in three listen-and-repeat conditions: participants heard either sung phrases, rhythmic spoken phrases or spoken phrases. A significant difference between the sung/rhythmical and spoken conditions was found for the tests in which the participants had to speak in the foreign language (Hungarian), although performance was highest in the sung condition for all tests.

2. Writing fluency

Alisaari & Heikkola (2016) analyzed whether writing fluency, viz. the number of words produced in a written text, can be influenced by musical pedagogical methods. In this classroom intervention study, students heard different sung or spoken versions of songs seven times during 15 minutes. The first group just listened to the sung songs, the second listened and sung the song and the third listened to a spoken version of the songs and recited them. At the end of these seven sessions, as in the pretest, students wrote two stories, based on comic strips. The authors observed that the number of words produced increased more in the singing group than in the reciting or listening group, but the differences were not significant.

3. Listening abilities

Kanel (1997) examined whether song based tasks would be as effective at improving listening comprehension in a standard listening test as conventional listening tasks. During this classroom intervention, one group of 10 classes heard regularly songs and made gap-fill quizzes while the other group of 10 other classes was taught listening with nonmusical materials, such as textbooks. The results indicate significant improvement for both groups, but neither treatment was more effective than the other. Furthermore, the participants answered a follow-up questionnaire about the learning methods. Even if there was little variation between both groups about the educational benefits of the respective listening training, it seems that the regular practice, the value in time spent on the quizzes and the interest in English were higher in the song group.

Another important listening skill in foreign language acquisition is the ability to segment speech into words. Sch ön et al. (2008) performed an experiment to determine whether songs can help learners segment foreign language speech. One group heard a continuous spoken stream of syllables, a second group heard a continuous sung stream of syllables with an association syllable/pitch (e.g. syllable *gi* = C), a third group also heard a continuous sung stream of syllables but without association syllable/pitch. After this training phase, they heard words and had to mention whether these were present in the stream that they have heard. The percentage correct responses was the highest for the group who heard the sung stream with an association syllable/pitch and the lowest for the group who heard the spoken stream.

4. Phonetic skills

Different studies examined the impact of musical FL methodologies on phonetic skills, both at the segmental and suprasegmental level.

At the segmental level, Lakshminarayanan & Tallal (2007) analyzed whether phoneme discrimination can be trained by listening to stimuli which are non-linguistic but which imitate the acoustic characteristics of linguistic stimuli. Therefore, they tested 19 students divided in a training and a control group. The pre- and posttests were same/different tasks for pairs of stimuli (e.g. *ba/da*). During the training period (30min per day during five days), the training group heard pairs of frequency modulated sweeps rising or falling in pitch. The participants had to mention the order of the falling and rising sweeps. Observing a significant improvement in *ba/da* discrimination for the training group, Lakshminarayanan & Tallal (2007, p. 270) concluded that 'non-linguistic acoustic perceptual training can impact syllable discrimination'.

Moradi & Shahrokhi (2014) examined the impact of using songs on both segmental and suprasegmental production. During 25 sessions of 20 minutes, the musical group listened to songs with music, repeated and memorized them, whereas the control group listened to spoken versions of the songs, repeated and memorized them. The results of the

pre- and posttest – in which participants read aloud words and sentences of the songs in a new context – indicate that the pronunciation of phonemes, the intonation, and the stress patterns were better for the musical group than for the control group.

Different researchers tested the efficacy of music use on FL suprasegmental abilities. Degraeve (submitted) examined whether melodies or rhythm can help French-speaking university students to perceive lexical stress in Dutch. 46 French speakers (25 non-musicians and 21 musicians) performed a discrimination task in which stimuli were either naturally spoken, either spoken with a beat on the stress, either sung. Scores were higher for the sung stimuli and for the spoken stimuli with a beat, compared to the spoken stimuli. Heidari-Shahreza & Moinszadeh (2012) focused on the impact of listening to melodies on stress perception. Participants were divided into two groups and were taught four stress patterns of two- and three-syllable English words¹. The experimental group heard first musical stimuli that are acoustically similar to word stress patterns (see Figure 1 for an example).



Figure 1 Musical stimulus acoustically similar to a two-syllable word with the stress on the 2nd syllable

After having heard the musical stimuli, the related target words (e.g. Japan, hotel) were introduced and practiced². This procedure was repeated for the four stress patterns. The control group listened first to each group of target words, then the placement of the primary stress was indicated and finally, the participants repeated the target words. After a short diversion activity, participants heard sets of four words and mentioned which has a different stress pattern. The experimental group obtained significantly higher results than the control group. A more detailed description of the methodology used would be needed to correctly evaluate the findings reported in this paper.

Finally, Fomina (2000) examined how the quality of the songs can impact the acquisition of FL intonation. In her study, participants heard songs that had either concurrent or non-concurrent melody with natural speech intonation. For example, in the song 'Tom's diner', some melodic lines have a falling intonation, whereas the spontaneous speech intonation should rise (e.g. before a subordinate clause). Participants, who had to reproduce lyrics from the songs in another context, reproduced the phrases with the intonation of the song, even if it was wrong. Fomina (2000) concluded that 'there exists a certain influence of song melody on speech intonation memorization' and that 'song material for teaching and developing different language skills should be carefully selected'.

5. Various skills (vocabulary, grammar, pronunciation, listening comprehension)

Some researchers measured the impact of their musical classroom interventions on different FL skills.

Ludke (2016) conducted a study in two classrooms of English speakers learning French. One group had French lessons that integrated different musical activities, such as creating (rap) songs, singing, listening to music, creating and performing a musical theatre piece. The other group received French lessons that were supplemented with visual art and drama activities, e.g. exercises with pictures, drawing, reading cartoons, write and record a script for a dramatic play. The pre- and posttests measured 12 language skills, as described in Figure 2.

Measure	Test	Description
1	Spoken responses	Respond to questions in French about a photograph
2 and 3	Productive vocabulary and pronunciation	Produce the French words for food items in a photograph
4	Conversation	Respond to questions in French about what the student likes to eat and drink for different meals
5	Receptive vocabulary (picture matching)	Match a list of French vocabulary words with photographs
6	Reading aloud pronunciation	Read a list of French words aloud
7	Grammaticality judgments: listening	Listen to French sentences and identify whether or not there was a grammatical error
8	Grammaticality judgments: reading	Read sentences and identify whether or not there was a grammatical error
9	Written grammar: masculine to feminine	Read short sentences and transform masculine words into the feminine forms
10	Written grammar: statements to questions	Read French statements and write a question that someone might ask to result in that response
11	Listening comprehension	Listen twice to an audio-recorded conversation and answer English listening comprehension questions
12	Intonation and flow of speech	Intonation and flow of speech ratings for the two speaking tests (measures 1 and 4)

Figure 2 Description of tasks on the pre-and posttests (Ludke, 2016, p.7)

Similar results between the two groups were found for productive vocabulary (task 2), receptive vocabulary with a picture-matching task (task 5) and grammaticality judgments when reading (task 8). The music group obtained lower scores than the visual art group for their pronunciation when reading aloud a list of words (task 6), a slightly higher

¹ The four patterns are: 1. two-syllable words, stress on the 1st; 2. two-syllable words, stress on the 2nd; 3. three-syllable words, stress on the 1st; 4. three-syllable words, stress on the 2nd.

² The authors do not describe what 'introduce' and 'practice' exactly imply.

score for the pronunciation of individual words from photographs (difference of 1.3% - task 3), but got higher scores than the visual art group for the seven other tasks.

Good, Russo, & Sullivan (2015) investigated the effect of a classroom intervention on the pronunciation of phonemes and vocabulary recall. Two groups were trained during four sessions of 20 minutes. The singing group heard a song, repeated the song singing and translated words; the spoken group heard a text, repeated the text and translated words. After the training sessions, the participants took part in four tests: 1. a pronunciation test in which they reproduced the lyrics (singing or speaking), 2. a vocabulary recall test in which they mentioned as many words as they could, 3. a vocabulary translation test which consisted in the translation of given words and 4. a test 6 months after the training in which students had to recall the lyrics and translate words. Results showed that the singing and spoken group equally performed for the pronunciation of consonants and for the translation of words after 6 months. The singing group outperformed the spoken group for the other tasks (pronunciation of vowels, recall, and translation on short term).

IV. DISCUSSION

The present article aimed to provide information about *how* and *why* music can be used in the FL classroom, since studies revealed that the discrepancy between the teachers' positive attitude toward music use in the FL classroom and its limited actual use could be explained by a lack of resources and a lack of theoretical grounding.

The first section provided a short review of music-related methods used in the FL classroom over time. Three main approaches have been described, namely listening to non-linguistic sounds or background music, practicing lyrical songs and using rhythmical activities. Moreover, some references to resources were gathered in order to provide teachers with adapted material to use music in their FL classes.

The second section examined why music can be beneficial for foreign language acquisition. Studies reveal a positive effect on general learning aspects, such as increased motivation and attention, reduced anxiety and cultural enrichment as well as on different linguistic skills. In terms of linguistic improvement, some results state that foreign language performance was higher when methodologies incorporated music, either in the background, through songs or in musical and rhythmical activities, than when no music or other artistic intervention was used. These findings are promising for both teachers and learners: using music for foreign language acquisition would have numerous learning and linguistic benefits and has not to be simply reduced to a 'fun activity'.

Despite these positive results, it seems that empirical research about the relation between music-related methodologies and FL acquisition is still in its recent years. Hence, there is little published data for some skills or there is contradictory evidence between studies. For example, concerning vocabulary acquisition, Legg (2009), Medina (1990) and Salcedo (2010) reported higher vocabulary scores in the musical groups compared to the control groups, whereas Kilgour et al. (2000) and Racette & Peretz (2007) did not observe any advantage in the musical condition or stated a musical benefit explained by the presentation rate. More research would be needed to enlighten these findings and to fulfill results about other skills, such as listening comprehension, phonetic proficiency or writing skills. In this respect, Ludke (2016) points out: 'To date, relatively few published, empirical studies have investigated the effects of FL learning through singing and song activities in the classroom, particularly for grammar or pronunciation skills' (p. 2).

In addition to the need for further research, the present findings must be interpreted with caution. Most studies reviewed here were comparisons or correlational studies. Inferring causation would thereby be unfounded. Such as described in the article, many external factors could explain the improvement of foreign language abilities with musical intervention, e.g. reduced anxiety or the increase of motivation and attention.

Finally, the question arises whether musical methodologies are adapted for every language learner. Personality, hobbies, and interests can positively or negatively interfere with the use of music for foreign language acquisition. For example, De Groot, (2006) reports findings of Furnham & Allass (1999) that stated that introvert persons performed better in observation or recall tasks in silence condition, whereas extraverts 'generally performed better in the music condition' (de Groot, 2006, p. 496). Musical training or aptitude could also be an influential factor. Many studies revealed a better performance of musicians compared to non-musicians in language tasks (for a review see Chobert & Besson (2013) and Magne, Schän, & Besson (2003)). In Degraive (submitted), results show that musicians benefit more from the use of melodies or rhythm for word stress detection, compared to non-musicians.

In summary, even if research about the use of music in the foreign language classroom is still in its recent years, this paper contributes to our understanding of FL methodology, giving different ways and resources to use music in the classroom and showing that music can benefit some foreign language skills. Teachers have now to carefully choose, structure and sequence their musical material and methodology in order to fully take benefit from the music-based lessons.

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