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Singing and arts activities in support of foreign language learning:

An exploratory study

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## Abstract

Educators have reported that incorporating the arts into the classroom can support foreign language (FL) learning. However, there is very little empirical evidence from the classroom to support this claim. This exploratory, quasi-experimental arts intervention study was conducted with native English speakers aged 12-13 years old as part of their beginning-level French instruction. For a total of 8.5 hours over a 6-week period, one group had their French lessons supplemented with singing and song activities, while the second had their French lessons supplemented with visual art and drama activities. French language performance was assessed by comparing each student's scores on curriculum-based language tests that were administered before and after the arts intervention program. Both groups showed large gains in overall French test scores,  $p < .01$ . Repeated-measures ANOVA showed a significant effect of the method of instruction on overall French test scores ( $p < .05$ ), with the greatest pre- to post-test percentage improvements occurring in the class that engaged in additional singing and song-related activities. This study adds to our understanding of how musical and arts activities can support foreign language learning and suggests that it is valuable to conduct future research studies in this area.

Keywords: foreign languages; arts intervention; singing; visual art; drama; adolescents

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## **1 Introduction**

Many teachers want to improve their instruction methods to increase students' success, enjoyment and motivation for learning foreign languages (FL). Arts activities are often suggested as a way to support classroom learning, and it has been argued that engagement in artistic activities can transfer to improvements in other areas (Deasy, 2002; Gazzaniga, Asbury & Rich, 2008; Winner, Goldstein & Vincent-Lancrin, 2013). FL learning resources and textbooks may contain visual aids such as photographs and drawings, as well as accompanying videos, dramatic dialogues and role-play activities, but it is less common for music, songs, movement and dance activities to be integrated into foreign language learning resources<sup>1</sup> (although Wendy Maxwell's Accelerative Integrated Method is an exception).

### *1.1 Music and songs in foreign language instruction*

Language teaching journal articles have described how teachers can incorporate songs into the foreign language curriculum to reinforce vocabulary (Coyle & Gómez Gracia, 2014; de Groot & Smedinga, 2014), pronunciation and intonation (Spicher & Sweeney, 2007), and grammar (Anton, 1990). It has been proposed that '[a]dding rhythm and melody to chunks of language invites rehearsal and transfers words into long-term memory' (Lake, 2002: 105) and that melody and rhythm also 'help to maintain the natural rhythm and stress of speech' (Cullen, 1999: 1). Some foreign language teaching

approaches have included songs, such as the listen-and-repeat Audio-lingual Method (Rivers, 1964), the Contemporary Music Approach, where song listening is used to support grammar learning (Anton, 1990), and the Melodic approach, which encourages the use of exaggerated rhythm and intonation as well as singing in the new language (Fonseca Mora, 2000).

The reasons given for the possible benefits of using songs in the classroom are extremely varied. Murphey describes a musical version of ‘din,’ (Krashen, 1983) in which words, sounds and phrases in the target language that have been heard, read or written are repeated and rehearsed involuntarily after exposure (Murphey, 1990), which occurs significantly more often in a sung presentation than in a spoken version (Salcedo, 2010). This fits with the dual integration hypothesis, which proposes that listening to songs may lead to the dual encoding of lyrics and melody, where the recall of one element can prompt retrieval of the other (Thiessen & Saffran, 2009; Ginsborg & Sloboda, 2007). Schön and colleagues (2008) showed experimentally that pitch information added to synthesized speech can improve nonsense word recognition, and suggested that songs may be useful at the beginning stages of FL learning. Recently, it was shown that a listen-and-repeat method for paired-associate learning of phrases in a new language was facilitated by singing compared to speaking or rhythmically speaking (Ludke, Ferreira & Overy, 2014).

Affective factors have also been proposed as a potential benefit of using songs in foreign language learning (Engh, 2013; Schön *et al.*, 2008; Good, Russo & Sullivan, 2014). It has been suggested that music listening can help reduce anxiety (Kramer, 2001; Felix, 1989), enabling a focus on FL material in a relaxed and pleasant way during the

learning process. It has also been argued that listening to music in the classroom can improve learners' focus, interest in and attitude toward the material they are learning (Engh, 2013).

There is increasing interest in cognitive neuroscience and psychology in the idea that music training may support the neural processing of certain features of language (Schön *et al.*, 2010; Patel, 2011; Kraus, Strait, & Parbery-Clark, 2012). It has been shown that music training leads to improvements in the fine-grained auditory perception and processing of other stimuli, including speech sounds (Moreno & Besson, 2006; Kraus & Chandrasekaran, 2010) and executive control (Moreno *et al.*, 2011)—skills that are also enhanced in fluent bilinguals (Bialystok *et al.*, 2005). Also, a classroom-based study showed that Spanish-speaking children who learned the lyrics of an English song had better immediate and long-term performance on tests involving pronunciation, recall and vocabulary translation compared to children who learned a spoken version of the lyrics (Good *et al.*, 2014). Another study showed that preschool children's receptive vocabulary improved more for words that they learned through singing, although productive vocabulary did not increase at the same level (Coyle & Gómez Gracia, 2014). In addition, children with better FL pronunciation tended to have higher musical discrimination abilities (Milovanov *et al.*, 2008). A follow-up study with Finnish adults showed that those with higher musical aptitude also had better FL English pronunciation (but not better performance on a listening task of phoneme discrimination) compared to the other participants (Milovanov, Pietilää, Tervaniemi, & Esquef, 2010). However, 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.

### *1.2 Visual art and drama activities in foreign language instruction*

Visual aids and drama activities have long formed an important part of foreign language instruction (Mueller, 1980; Moore, Koller, & Kreie Arago, 1994). Reasons for using visual art and drama activities include the development of listening and verbal interaction skills, literacy, focused attention and concentration, balancing emotion and cognition (again including lower anxiety and increased motivation to learn), and drama in particular providing a way to build a new intercultural identity for the language learner.

Hoetker (1969) argued that including drama activities in the classroom can support the learning of literature and a range of communication skills in the native language, and may enable students whose learning styles are visual or kinesthetic to better learn language material. Striker (1992) further suggested that there is a natural connection between art and language, arguing that artistic expression and imagination precedes and lays the foundation for linguistic development.

It has been argued that visual art activities can engender a better balance between the emotional and cognitive domains in the classroom (Shier, 1990). Stern's work in this area (1980) showed that adult ESL students who took part in drama activities had, over time, 'heightened self-esteem, motivation, and spontaneity; increased capacity for empathy; and lowered sensitivity to rejection.' Canning-Wilson (2000) wrote that visual cues and drama activities that include movement and gesture can support listening comprehension and increase students' ability to focus on auditory materials. Researchers have also argued that drama and movement activities can promote literacy, increase

motivation, and decrease anxiety for young English as an additional language learners (Rieg & Paquette, 2009). Furthermore, Tschurtschenthaler (2013) and Brash & Warnecke (2009) have argued that drama activities and role-play provide an experiential way of learning a foreign language and enable learners to explore and develop a new identity.

Research has shown that visual information, including video of facial movements, can support listening comprehension, with intermediate learners further benefiting from viewing gestures (Sueyoshi & Hardison, 2005). One study showed that a group of students who were taught Spanish with additional audiovisual aids had significantly higher performance in vocabulary and listening comprehension tests, but not in grammatical structure tests (Snyder & Colon, 1988). In addition, the pronunciation of vocabulary pairs in beginning-level FL Japanese students was improved through electronic feedback that included a combination of text, audio and visual information (Hew & Ohki, 2004). A recent research synthesis showed that animated visual aids, particularly video recordings reinforcing the content to be learned, were most beneficial (Höffler & Leutner, 2007).

Research has consistently highlighted the importance of meaningful (rather than ornamental) visual aids to reinforce auditory (Ginther, 2002) or written material (Kost, Foss & Lenzini, 1999). Another study found greater FL English vocabulary and reading comprehension with moving images (video vs. pictures), suggesting that this more dynamic presentation method enabled students to focus longer on the material to be learned (Al-Seghayer, 2001). However, extra visual information may be distracting for learners with low verbal or low spatial ability levels, especially for reading

comprehension, as shown in a study of FL German vocabulary learning conducted by Plass, Chun, Mayer & Leutner (2003).

A synthesis of research on drama's effects on verbal skills in the native language showed that acting out a play with a structured plot produced gains in comprehension, reading achievement, reading readiness, and writing, whereas an unstructured or combination structured/unstructured plots resulted in larger effects for oral language development (Podlozny, 2000). Another recent research synthesis showed that in the foreign language classroom, drama activities can promote intercultural communicative competence, foster imagination, and facilitate contextually-situated interaction (Belliveau & Kim, 2013). The focus on context-based interaction may be one reason that drama activities can improve students' communicative competence.

Given the weight of positive claims and experimental research in this area, it seems important to conduct a classroom-based study exploring the efficacy of singing and song-related activities in foreign language learning compared with an instructional approach using visual art and drama activities. Most research on the arts and foreign language learning has focused on English as a second language and on vocabulary learning (Good *et al.*, 2014; Medina, 1993; Rieg & Paquette, 2009), as well as on adult students (Stern, 1980; Al-Seghayer, 2001; Fomina, 2000; Salcedo, 2010) or young children (Coyle & Gómez Gracia, 2014; Good *et al.*, 2014; Medina, 1993; Rieg & Paquette, 2009). Thus, in addition to more classroom-based empirical research, there is a need to investigate the learning of languages other than English with different age groups, which will help us



better evaluate the generalizability of the positive results of using arts activities to support FL learning.

The present quasi-experimental, classroom-based study aimed to measure pre- to post-test gains in a range of beginning-level French skills over a 6-week period with adolescent learners. The objective was to explore whether French learning in the FL classroom—beyond predicted vocabulary gains—could be facilitated when new material is taught through an instruction method that integrated singing and song activities into FL lessons compared to a method that used additional visual art and drama activities.

To this end, a variety of activities were designed to reinforce adolescent learners' learning based around the school's normal FL French curriculum. To avoid the Hawthorne effect (French, 1953), lessons for the two groups were designed to be as similar as possible in terms of increased novelty, fun and motivation. A French test composed of a range of tasks was developed to explore whether particular FL skills might be improved more than others; all measures required students to use the French material they had learned in class in a new context.

## **2 Method**

### *2.1 Participants*

Following ethical approval, two French classes in a Scottish secondary school were recruited. The school administrators, teachers and the students themselves were given information about the study (not including the specific research question or test materials) and were able to ask questions before the study commenced. A letter sent to the students' parents provided written information about the study and offered the opportunity not to have their child's data included in the data collection. At the start of the arts intervention

study, Group A (Singing and song activities) had 29 students and Group B (Visual art and drama activities) had 28 students. Due to absences on the testing days, the complete data set after post-testing had a total of 45 students (Group A:  $N = 23$  and Group B:  $N = 22$ ). Students in the two groups were well matched for age and gender (Group A: 11 M and 12 F, mean age = 13.42 years,  $SD = 0.08$  years; Group B: 9 M and 13 F, mean age = 13.33 years,  $SD = 0.08$  years).

The two groups were also well matched for IQ based on Cognitive Ability Test (CAT) scores, a test that was previously administered by the school. The CAT scores available for the participating students all fell within the normal range and the mean difference between the two groups was not significant,  $t(39) = 1.38$ ,  $p = .17$  (two-tailed).<sup>2</sup> Information about the participants' language experience and background was also gathered before the intervention began. All participating students reported that French was their first foreign language and none were bilingual.

## 2.2 *Study design and procedure*

A quasi-experimental, matched-groups design with two pre-existing French classes was used. The standard French curriculum for the 6-week period was supplemented with singing and song activities in one class (Group A) and with visual art and drama activities in the other class (Group B).

During the arts intervention, one class session per week (55 minutes) was devoted entirely to the new arts-based instruction method, taught by the author, with support from a former French teacher who was also a composer on two occasions when creating a new song or a new dramatic dialogue with each class. The two other weekly French class sessions (55 minutes each) were taught by the classroom teachers using their regular

teaching method, but with the author teaching a component (10-15 minutes) using the new arts activities. The author was present for all of the French lessons in the two groups during the 6-week arts intervention period and supported the students' French learning as needed.

The students' French learning was assessed through a curriculum-based French pre- and post-test that consisted of a series of tasks developed specifically for this study. The French test included listening comprehension, speaking, reading and writing tasks, in which pronunciation and intonation, vocabulary and grammatical structures were measured. The topics included in the French test were related to the specific content of the textbook during the arts intervention period. The appendix contains a brief description and sample items for each task on the curriculum-based French test.<sup>3</sup>

All tests were held on an individual basis in quiet rooms near the school office and were scheduled during school hours. The French test took approximately 25-30 minutes to administer and was audio-recorded throughout on a digital audio tape (DAT) recorder. The post-test procedure was identical to that of the pre-test, but with the addition of a series of interview questions about the student's experiences of taking part in the study. The qualitative data arising from the interviews is not discussed in the present paper.

### 2.3 *Materials and measures*

#### 2.3.1 Lesson plans

Rather than focusing on teaching a limited range of vocabulary items or specific grammatical content during the 6-week period of instruction, for practical reasons the lessons implemented into the French curriculum for each classroom group were designed to reinforce the textbook's and the teachers' focus on a broad range of French knowledge

and skills, including listening comprehension, speaking, reading, writing, pronunciation and intonation, vocabulary and grammar. The lessons were designed to fit into the pre-existing beginning-level French curriculum and the teachers' classes as seamlessly as possible. A copy of the beginning-level *Métro Vert* textbook (McNab, 2000) was used to design the lessons and the French language test. Reviewing the textbook provided information about what the students had already learned and what material would be covered in class during the arts intervention.

The lesson plans were developed in consultation with the two regular French teachers to fit as closely as possible with the school's customary instructional styles and aims, broadly using a communicative language teaching approach (Brown, 2000). Designing the lessons in advance ensured that the teaching activities in lessons for both groups were as similar as possible. The teachers received a copy of the lesson plans beforehand and provided feedback and advice about the proposed lessons. The French teachers were also given a representative preview of several lessons before the arts intervention began.

Lesson goals were to enable learners to:

- Communicate basic opinions about food and drinks they like.
- Produce appropriate, beginning-level French vocabulary related to food and traveling to Paris.
- Ask for things to eat or drink using the new form *je voudrais*.
- Accurately identify and produce the first-, second- and third-person singular and plural forms of regular *-er* verbs.

- Identify and produce the *aller* + infinitive structure to express future intention.
- Pronounce the French words in the textbook material covered and in the new activities well enough that a French speaker would understand.

The French lessons incorporated a variety of entertaining, challenging and educational activities. Table 1 shows a snapshot of the French lessons during each week of the study. Lessons included many phrases and complete sentences in both the song lyrics and spoken texts because it has been argued that teaching the proper pronunciation of individual sounds in isolation does not tend to transfer to improvements in FL speaking skills (Morley, 1991).

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Insert Table 1 about here

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For Group A (Singing and song activities), the French lessons incorporated a variety of singing or chanting activities. Lessons used traditional French tunes with modified lyrics (relevant to the topics covered in the textbook), rap songs from the French Caribbean, the students' own musical compositions using vocabulary from the textbook for the song lyrics, and popular songs from French culture. Short songs created specifically for the lessons were designed to teach and reinforce pronunciation, vocabulary and grammatical structures. Activities included Cloze exercises (written texts

with certain words removed), unscrambling the song lyrics, singing along and creating their own music and lyrics.

For Group B (Visual art and drama activities), lessons included oral repetition techniques with spoken French dialogues, comics and cartoons. Lessons also included a vocabulary bingo game (students drew and labeled French food items from the textbook into bingo grids beforehand), French cartoons and comics and dramatic dialogues with supporting pictures and photographs. Short dramatic dialogues created for the lessons were designed to reinforce features of pronunciation, vocabulary and grammar presented in the textbook chapters. Drawing, creating comic cartoons, practicing dramatic dialogues aloud, creating new dialogues using vocabulary and grammar from the textbook and watching a 'Scooby Doo' cartoon (with minimal incidental music) in French with English subtitles were among the activities used in lessons for Group B.

With Group A (Singing and song activities), the intervention culminated in the students creating a composition of several songs for a musical theater piece about a school trip to Paris, which the students sang during class for an audio recording. With Group B (Visual art and drama activities) the intervention concluded with the students' creation of a script for a play about a school trip to Paris, which was also audio-recorded during class. As recommended by Kao & O'Neill (1998), the development of the musical theatre piece and the play were '...built up from ideas, negotiations, and responses of all the participants in order to foster social, intellectual, and linguistic development.' Audio recordings of the students' creative output were used to create an audio-visual DVD with color photographs that accompanied the storyline that the students had created together in

each class. A copy of the DVD was given to the students and French teachers after the arts intervention had ended.

### 2.3.2 French test and data analysis

The arts intervention program lasted six weeks, during which time two topics were covered in the class textbook: a unit about food and a unit about Paris. A curriculum-based French test was developed specifically for this study to measure any improvement on the specific language items that were covered in the textbook during the arts intervention program. The French tasks in the test were thus designed to assess students' pre-existing French knowledge on specific topics and to measure any change in performance at post-test on the same measures.

The French test included a range of tasks assessing students' speaking, listening comprehension, pronunciation, reading, and writing skills, as well as vocabulary and grammatical knowledge. Each French task had between 4 and 12 items and lasted approximately 1-2 minutes. The tasks all required the students to transfer the French content they had learned in class to a new situation. Using the audio recordings and written responses collected during testing, one point was awarded for each correct answer given. The tests were scored blind to group membership. The specific skills assessed in each brief task included in the French test are briefly outlined in Table 2.

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Insert Table 2 about here

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### 3 Results

Complete pre-test and post-test scores were obtained for 45 students in the two French classes, Group A (Singing and song activities),  $N = 23$ , and Group B (Visual art and drama activities),  $N = 22$ .

To compare performance across all 12 measures included in the French test using the same scale, the students' raw score on each task was converted to a percentage score and then those scores were averaged to provide a total French performance score (out of 100%). The total French performance pre-test scores showed no significant difference between the two groups,  $t(43) = 1.31$ ,  $p = .20$  (two-tailed), Cohen's  $d = .40$ . Overall, the 12 tasks on the French test showed good internal consistency (Cronbach's  $\alpha = .741$ ).

The mean percentage French performance scores for the two groups showed a significant increase from pre-test to post-test in both groups. As shown in Table 3, substantial gains were made in overall French performance in both groups over the 6-week period:  $p = .001$  in Group A (Singing and song activities) and  $p = .002$  in Group B (Visual art and drama activities).

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Insert Table 3 about here

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To compare the effects of French learning through singing and songs (Group A) with learning through visual art and drama activities (Group B), a 2 x 2 repeated-measures analysis of variance was calculated (see Figure 1). Using a critical alpha of .05, the ANOVA results showed the main effect of method of instruction,  $F(1, 43) = 4.10$ ,  $p =$



.049, with Group A showing a significant increase in overall French test scores compared to Group B, with an intermediate effect size of  $\eta^2 = .087$  (Cohen, 1988).

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Insert Figure 1 about here

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To explore the differences on particular tasks measured in the French test, Table 4 shows the mean French percentage scores in each group at pre-test and at post-test on each task, ranked by the mean group difference. Repeated-measures MANOVA comparing performance on all 12 tasks on the French pre-test compared to the post-test scores showed a trend towards a main effect of learning condition, with Group A (Singing and song activities) showing higher performance than Group B (Visual art and drama activities),  $F(2, 43) = 2.88, p = .067$ , with an intermediate effect size ( $\eta^2 = .12$ ). Table 4 shows that Group A (Singing and song activities) outperformed Group B (Visual art and drama activities) at post-test on most measures, with the largest differences found in the French tasks measuring grammar (writing and listening-based grammaticality judgements), listening comprehension, conversation/speaking skills, and intonation. Performance between the two groups was similar on the tasks measuring vocabulary (receptive and productive), reading (aloud and grammaticality judgements), and the pronunciation of individual French words. For the reading aloud pronunciation task, mean scores improved more in Group B than in Group A (by 1.3%).

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Insert Table 4 about here

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#### 4 Discussion

This 6-week quasi-experimental arts intervention study showed that including singing and song activities and visual art and drama activities supported French learning for adolescent Scottish secondary school students. Substantial gains were made in French performance in both groups, with repeated-measures ANOVA showing a greater improvement in overall French test scores in Group A (Singing and song activities) compared to Group B (Visual art and drama activities), which was significant at the  $p < .05$  level. Repeated-measures MANOVA including pre-test and post-test scores on each of the 12 French tasks showed a similar, but non-significant, trend ( $p = .067$ ).

This exploratory study adds to our understanding of whether arts activities can support the learning of material in a new language by empirically showing a stronger benefit for FL learning through the incorporation of singing activities into the classroom over a 6-week period, compared to a group in which students learned through additional visual art and drama activities. The arts intervention lessons that were integrated into the French classroom alongside regular instruction by the adolescents' French teachers were very effective for improving performance on a curriculum-based test battery, particularly in the singing and song activities group. The present results demonstrate the real-world applicability of singing activities to learn foreign language material, rather than just the effectiveness of listening to and singing FL material under controlled, experimental conditions (Ludke, Ferreira & Overy, 2014). In addition, this study extends previous research on foreign language learning through arts activities since it

includes a different age group (adolescents) who were learning a language other than English (beginning-level French).

One important limitation of this study relates to the sample size and the effect of individual French teachers on student learning and performance. Because the two pre-existing classroom groups had different teachers (albeit with similarly high levels of teaching experience in that school), it is not possible to fully establish the extent to which the greater improvements in Group A's French post-test scores arose due to the singing and song activities or to their regular classroom teacher's effectiveness and teaching style. This limitation is partially mediated by the fact that student performance on the French pre-tests (before the arts intervention began) did not differ significantly between the two groups, but nevertheless the greater increase in French post-test scores for Group A may be partially due to the classroom teacher's input rather than to the arts intervention alone. Conducting similar studies with larger groups of learners would also be beneficial.

In order to assess a range of French skills, due to this study's exploratory nature, each French task had only a relatively small number of test items that were specifically created for this study. This variety of French tasks to assess learning of material that the students were learning in their textbook over a short time period is a limitation of the current study. The low number of items on each task may partly explain the mean decrease in both groups' performance on the Grammaticality judgements: Reading task and the mean decrease in scores on the Written grammar: Statements to questions task and the Grammaticality judgements: Listening task in Group B (Visual art and drama activities). Although there were no ceiling or floor effects observed for individual

French tasks, the decreases in scores suggest that the French grammar tasks were particularly challenging for the students. It would be useful for future research to focus on the effects of arts activities on specific aspects of FL learning, such as grammatical knowledge, particularly since Group A (Singing and song activities) improved greatly on a creative grammar task which required students to write questions in French.

In contrast with most previous research, in the present study students were often engaged in listening to and repeating the FL material through singing or speaking aloud, rather than only listening to a sung or spoken presentation. This fits with the recent finding that learning a foreign language song in English can enhance pronunciation and vocabulary (Good *et al.*, 2014). An interesting question for future research is whether listening to songs in a new language is sufficient to support learning and memory, or whether a benefit will only arise when learners sing the lyrics.

In this study, the students in the singing group improved most on grammatical skills, listening comprehension, conversation/speaking, and intonation and flow of speech. This may be due to a greater incidence of ‘*din*’ (Krashen, 1983), which has been shown to arise more frequently from song lyrics than from speech (Salcedo, 2010). There were smaller mean differences observed between the groups for vocabulary and reading skills, but the students’ higher performance on vocabulary tasks and for the pronunciation of isolated words in the visual art and drama group may be due to a stronger referential connection made between individual French words and their visual representation (Johnson-Glenberg, 2000), particularly since all of the vocabulary tasks in the French test for this study included photographs. Future research could test FL skills over a longer period of time and could explore the possibility that visual art and

drama activities may lead to a learning and memory advantage for vocabulary, potentially including the pronunciation of new words.

While learners in this study generally reported that they enjoyed the activities—both in the singing and song activities group and in the visual art and drama group—it is not clear whether individual differences in motivation or performance anxiety might have also contributed to or interfered with their French learning. However, some researchers have suggested that musical, visual art and drama activities can support FL learning due to positive emotions or enhanced motivation leading to an improvement in attention (Sandberg, 2009; Ronke, 2005), along with a potentially resulting decrease in students' performance anxiety for FL learning with musical materials (Murphey, 1990). Affective factors were not measured in the present study, but motivation, emotion and the level of engagement of attention with arts-based language learning materials are factors that are worthy of further investigation.

Since language learning requires extensive rehearsal of new words and structures, repeatedly listening to and singing a song has the potential to 'automatize' the motor coordination required to produce the FL linguistic structures and phrases that occur in the lyrics, which could transfer from listening to and singing those FL sounds (as in the present study) to listening comprehension, spoken production and intonation (and potentially, over longer periods of time, to reading and/or writing skills, cf. Alisaari & Heikkola, 2016). This initial emphasis on the sounds and phonetic aspects leads to the prediction that singing and song activities may be particularly useful at the beginning stages of foreign language learning, when learners are attempting to decode the new language's sound system and orthography.

The present study's findings also fit with a classroom-based study showing that after a 6-month delay, Spanish-speaking children learning FL English showed better surface-level recall, but not vocabulary translation, of material that was initially learned through an English song vs. a poem (Good *et al.*, 2014). On this basis, a potentially fruitful line of future research would be to investigate whether the repeated integration of musical and linguistic features—which may include foreign language lyrics, melody, harmony, instrumentation, etc. depending on the song—provides a memory cue that primarily facilitates surface-level retrieval of the words and/or melody. Another possibility is to explore the extent to which, with continued instruction in the new language, a deeper understanding of the meaning of the lyrics is possible—with more advanced language students, for example, discussing idiomatic expressions and the thematic content of the lyrics.

Based on the mean differences in performance from pre-test to post-test, the present results suggest that active engagement in singing and song activities might lead to greater improvement in specific areas (including writing, listening comprehension, spoken conversation skills, intonation and flow of speech, and grammar), different from the benefits arising from integrating visual art and drama activities into FL instruction (including vocabulary, pronunciation of words in isolation, and reading comprehension). The present study evaluated a range of French skills, and due to its exploratory nature it was not designed to compare them or to focus on one particular FL skill. Future research could take this work further and investigate the effects of learning specific FL skills through musical, singing, visual art and drama activities.

On the basis of the evidence arising from this study's results and related literature, foreign language teachers wishing to enhance student learning may find it worthwhile to consider incorporating arts-based activities, including songs, into the curriculum in addition to more formal, textbook-based materials. Some researchers recommend the use of folk songs in the classroom since they are more likely to preserve the natural intonation patterns of the language compared to popular songs (Spicher & Sweeney, 2007: 38), but while folk songs can provide valuable, authentic pedagogical material, educators should not feel restricted to them. This study used a mixture of well known, existing melodies with new lyrics; specially composed songs to reinforce particular vocabulary and grammatical structures; famous recorded songs in different styles that were likely to appeal to adolescents; and songs created by the students themselves, with support to write lyrics and then build a tune one musical note at a time. Since many of the students especially enjoyed creating their own songs, scripts, and artwork, teachers may wish to provide room for learners' imagination and creativity in artistic classroom activities.

## **5 Conclusion**

This arts intervention study makes an important contribution to the literature by providing some of the first empirical evidence for a significant benefit of learning material in a foreign language through arts activities in a naturalistic setting, and in particular showing a benefit for musical activities that are based around singing. This study contributes to our understanding of foreign language instruction in the classroom, showing that the inclusion of singing and song activities over a 6-week period resulted in

a significant overall benefit in adolescent learners' French performance, which was greater than the (also significant) benefit observed for introducing additional visual art and drama activities into the French curriculum. Future classroom-based and scientific research studies in this area have the potential to improve foreign language learning outcomes for learners and begin to develop a better understanding of how and why learning and memory for verbal material can be supported through singing and song activities, as well as through visual art and drama activities.

Author's note: The questionnaire, French lesson plans, and test materials are available from the author by request.

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## Footnotes

<sup>1</sup> For example, the *Métro Vert* textbook used in the two French classes that took part in this arts intervention study included a French song at the end of each unit to reinforce the material covered (McNab, 2000).

<sup>2</sup> The students' CAT scores are not reported because of an agreement with the school regarding data protection. In addition, CAT scores for four participants were not provided (two students in each group).

<sup>3</sup> Students also completed a brief musical ability task (sing and tap the syllables of 'Happy Birthday') and drawing task (copy a drawing of an elephant) which established that there were no pre-existing differences between the groups on these factors. At post-test, students' scores had improved slightly on the art form that was included in their French lessons (n.s.).

Table 1

*Brief description of lessons in each French class*

<b>Group A (Singing and song activities)</b>	<b>Group B (Visual art and drama activities)</b>
Week 1: Song about food and shops to practice vocabulary and grammar. Created a new song in class.	Week 1: Dialogue using food and shop pictures to practice vocabulary and grammar. Played Pictionary.
Week 2: Adapted traditional and rap songs with new lyrics to practice new words relating to foods and shops.	Week 2: Pupils drew food items to play vocabulary bingo. Photo crossword puzzle to practice new words.
Week 3: After singing rap song together, pupils created their own rap songs to perform as a full class activity.	Week 3: Astérix comic strip related to food; pupils created their own comics with captions, to share with the entire class.
Week 4: Learned new Paris vocabulary and the song 'Les Champs-Élysées.' Cloze & scrambled-lines activities.	Week 4: Learned new Paris vocabulary and watched Scooby Doo cartoon (in French with English subtitles). Learned a dialogue extract from cartoon.
Week 5: Using new Paris vocabulary, began to decide the plot and to write lyrics for the musical theatre piece.	Week 5: Using new Paris vocabulary, began to decide the plot and to write dialogue for the dramatic play.
Week 6: Created and recorded an original musical theatre piece with songs using pupils' ideas for the setting, plot, grammar, and vocabulary.	Week 6: Created and recorded an original script for a dramatic play using pupils' ideas for the setting, plot, grammar, and vocabulary.

Table 2

*Brief description of tasks on the French test*

<b>Measure</b>	<b>Test</b>	<b>Description</b>
1	Spoken responses	Respond to questions in French about a photograph.
2 & 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 judgements: Listening	Listen to French sentences and identify whether or not there was a grammatical error.
8	Grammaticality judgements: 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).

Table 3

*Overall mean French test scores in Group A (Singing and song activities) and Group B (Visual art and drama activities)*

<b>Group</b>	<b><i>N</i></b>	<b>Pre-test <i>M</i></b> <b>% score (<i>SD</i>)</b>	<b>Pre-test</b> <b>range</b>	<b>Post-test <i>M</i></b> <b>% score</b> <b>(<i>SD</i>)</b>	<b>Post-test</b> <b>range</b>	<b><i>t</i></b>	<b><i>p</i></b>
Group A	23	55.1 (7.5)	38.0-69.8	62.2 (6.0)	49.5-71.6	3.4	.001
Group B	22	52.5 (5.4)	44.7-63.5	58.1 (5.5)	49.3-66.9	3.6	.002

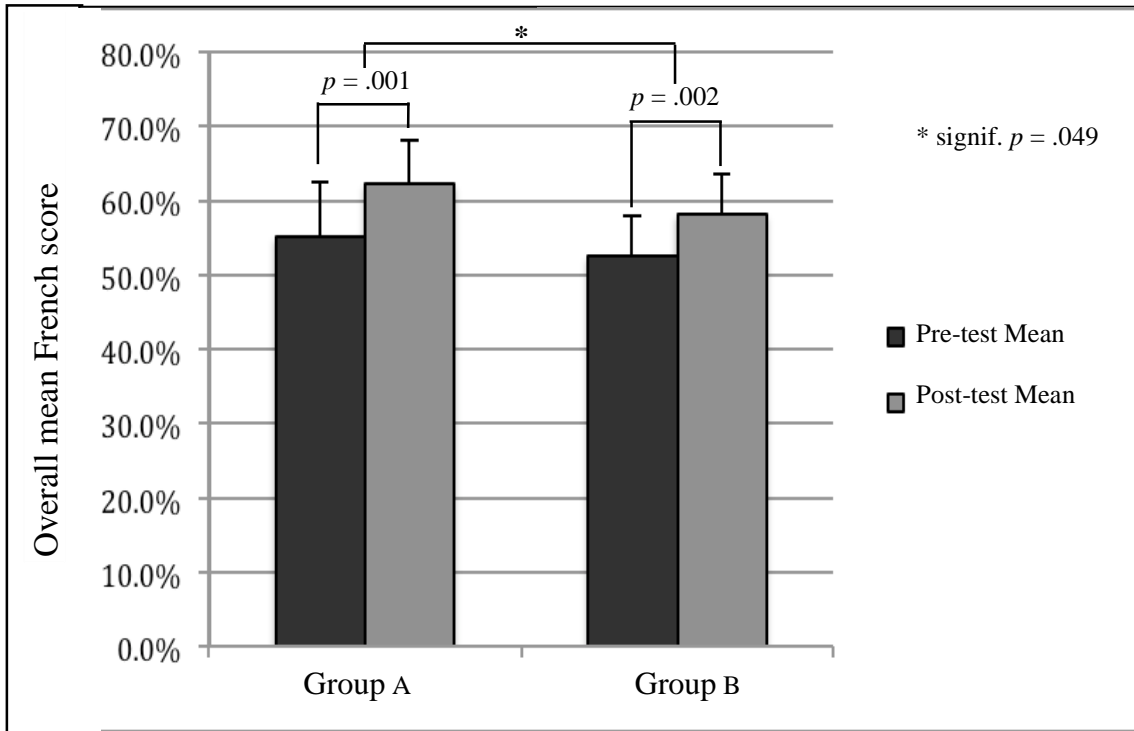
Table 4

*Mean French Pre/Post-test scores, ranked according to percentage difference between Group A (Singing and song activities) and Group B (Visual art and drama activities) on each measure*

Rank	Measure		Group A % scores (N = 23)		Group B % scores (N = 22)		Mean diff. (Group A vs. B)
			M (SD)	Range	M (SD)	Range	
1	Written grammar: Statements to questions	Pre	27.0 (14.9)	0.0-60.0	20.5 (13.3)	0.0-40.0	16.7%
		Post	33.5 (19.2)	0.0-80.0	16.8 (12.1)	0.0-40.0	
2	Listening comprehension	Pre	71.7 (26.4)	25.0-100.0	56.8 (25.8)	25.0-100.0	9.0%
		Post	76.1 (20.6)	25.0-100.0	67.1 (28.2)	25.0-100.0	
3	Intonation and flow of speech	Pre	63.5 (15.6)	40.0-80.0	60.9 (16.9)	20.0-80.0	6.0%
		Post	69.6 (16.9)	40.0-100.0	63.6 (15.9)	20.0-80.0	
4	Grammaticality judgements: Listening	Pre	54.6 (17.1)	22.2-88.9	56.6 (14.5)	33.3-77.8	5.4%
		Post	60.5 (18.6)	22.2-100.0	55.1 (16.3)	22.2-77.8	
5	Written grammar: Masculine to feminine	Pre	46.3 (15.7)	16.7-73.3	43.9 (11.1)	23.3-66.7	4.6%
		Post	55.6 (12.7)	26.7-83.3	51.0 (8.8)	33.3-70.0	
6	Spoken responses	Pre	47.0 (8.6)	28.0-60.0	45.3 (7.3)	32.0-60.0	4.2%
		Post	63.8 (8.2)	40.0-80.0	59.6 (10.3)	40.0-80.0	
7	Conversation	Pre	52.2 (10.1)	30.0-70.0	54.6 (11.0)	40.0-75.0	2.5%
		Post	63.9 (7.1)	50.0-75.0	61.4 (8.0)	40.0-75.0	
8	Pronunciation	Pre	69.6 (18.0)	20.0-100.0	64.6 (16.3)	40.0-100.0	1.3%
		Post	70.4 (11.9)	40.0-80.0	69.1 (13.4)	40.0-100.0	
9	Receptive vocabulary (picture matching)	Pre	60.3 (13.2)	38.0-92.0	58.8 (15.4)	31.0-85.0	0.7%

		Post	75.3 (14.2)	46.0-100.0	74.6 (11.0)	46.0-92.0	
10	Productive vocabulary (spoken)	Pre	54.4 (13.4)	30.0-80.0	50.9 (10.2)	30.0-70.0	0.6%
		Post	67.0 (10.2)	50.0-90.0	66.4 (9.0)	50.0-80.0	
11	Grammaticality judgements: Reading	Pre	55.1 (15.5)	33.3-83.3	59.9 (19.7)	33.3-100.0	0.1%
		Post	49.3 (13.8)	16.7-66.7	49.2 (19.6)	16.7-83.3	
12	Reading aloud pronunciation	Pre	59.4 (16.3)	33.3-86.7	57.6 (11.9)	33.3-73.3	-1.3%
		Post	62.0 (11.3)	40.0-80.0	63.3 (10.4)	46.7-86.7	

Fig. 1 Overall mean French pre-test and post-test scores in Group A (Singing and song activities) and Group B (Visual art and drama activities)



**Appendix: Sample items from French test<sup>1</sup>**

*Task 1: Student responds to questions in French about a photograph.*

French skills measured: Spoken responses

Sample items:

Interviewer:            Quel repas est dans cette photo ?<sup>2</sup>  
 Possible responses:    Le petit déjeuner / Le déjeuner.  
 Interviewer:            Qui est dans la photo ?  
 Possible responses:    Un enfant / une fille et une mère / une femme.

*Tasks 2 & 3: Student produces the French words for food items in a photograph.*

French skills measured: Productive vocabulary and pronunciation

Sample items:

Interviewer:            Qu'est-ce qu'il y a sur la table ?  
 Possible responses:    une bouteille d'eau, un café, une baguette, un ananas, de la  
 confiture, une banane, une prune, un croissant

*Task 4: Student responds to questions in French about what he or she likes to eat and drink for different meals.*

French skills measured: Conversation

Sample items:

Interviewer:            Qu'est-ce que tu manges chez toi pour le petit déjeuner ?  
 Possible responses:    [Je mange] [different food items in French, e.g., *des céréales*].  
 Interviewer:            'Qu'est-ce que tu bois chez toi pour le petit déjeuner ?'  
 Possible responses:    [Je bois] [different food items in French, e.g., *du thé*].

*Task 5: Student matches a list of French vocabulary words with photographs.*

French skills measured: Receptive vocabulary matching

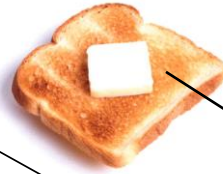
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<sup>1</sup> Most of the tests had an example item to check whether the student understood the instructions before beginning the test; example items are not included here due to space constraints.

<sup>2</sup> The photograph showed two people eating at a dining table with different types of food and drink. The same photo was used for the next activity (and pronunciation was also assessed for the food items shown in the photo).



Sample items:



**un badinage**

**la cathédrale de Notre Dame**

**le pain grillé**

**une fille**

**le fruit**

**la planche à voile**

*Task 6: Student reads a list of French words aloud.*

French skills measured: Reading aloud pronunciation

Sample items:

un  
deux  
trois  
quatre  
cinq  
un copain  
l'après-midi  
drôle  
un paquet  
la pâtisserie  
la rivière  
la station de métro  
une promenade  
pénétrant  
ordonner

*Task 7: Student listens to French sentences and identifies whether or not there was a grammatical error.<sup>3</sup>*

French skills measured: Grammaticality judgements: Listening

Sample items:

- |                           |  |
|---------------------------|--|
| 1. Où ont les stylos ?    | Correct response: 'Non.' [ <i>Où sont</i> ]  |
| 2. Je suis mal à la tête. | Correct response: 'Non.' [ <i>J'ai mal</i> ] |

*Task 8: Student reads sentences and identifies whether or not there was a grammatical error.*

French skills measured: Grammaticality judgements: Reading

Sample items:

- |  | <b>Correct</b> | <b>Incorrect</b> |
|--|----------------|------------------|
| 1. Je suis très calé.                                  | [✓]            | [ ]              |
| 2. Mon copain est plus grande que moi.<br>[plus grand] | [ ]            | [✓]              |

*Test 9: Students read short sentences and transformed the masculine words into the feminine forms, following a model.*

French skills measured: Grammaticality judgements: Reading

Sample items:

1. Mon grand-père parle au musicien jeune, anglais et amusant.

Correct response: Ma grand-mère parle à la musicienne jeune, anglaise et amusante.

2. Bien sûr, tu as de très bons amis français.

Correct response: Bien sûr, tu as de très bonnes amies françaises.

*Test 10: Students read French statements and wrote a question that someone might ask to result in that response, according to a model.*

French skills measured: Written grammar: Statements to questions

Sample items:

Possible response: Où habitent-ils ?

1. Ils habitent près de la tour Eiffel.

<sup>3</sup> Students were instructed to respond 'oui' to indicate that s/he thinks the sentence is grammatically correct and to respond 'non' to indicate that s/he thinks there was a mistake.

Possible response: Qu'est-ce que vous faites le week-end ?

2. Nous faisons du ski et du tennis le week-end.

*Test 11: Students listened twice to an audio-recorded conversation in French and answered listening comprehension questions in English.*

French skills measured: Listening comprehension

*Dialogue :*

- Marie :    Âllo ?  
 Antoine :  Bon soir, Marie.  
 Marie :    Bon soir, Antoine. Ça va ?  
 Antoine :  Non, ça ne va pas.  
 Marie :    Tu ne te sens pas bien?  
 Antoine :  Non, pas du tout. J'ai mal à la gorge et je tousse beaucoup.  
 Marie :    Ah, c'est dommage ! Alors tu ne veux pas aller au cinéma ce soir ?  
 Antoine :  Non, je suis désolé. Je ne peux pas.  
 Marie :    Est-ce que tu voudrais quelque chose de la pharmacie ?  
 Antoine :  Non, merci.  
 Marie :    Tu ne veux rien ? Dis-moi si tu as envie de quelque chose à boire, à manger...je viens chez toi. Je vais aller au cinéma un jour quand tu te sens mieux. J'ai déjà dit à Sandrine que je n'avais pas vraiment envie d'aller voir ce film.  
 Antoine :  Bon, tu es très sympa, Marie. Peut-être tu peux m'acheter une bouteille de jus d'orange ?  
 Marie :    De rien. Bof, je voudrais te voir même si tu es malade.

Sample items:

1. Why did Antoine call Marie?

Correct response: *He was feeling ill and he could not go to the cinema.*

2. What did Marie say she would do for Antoine?

Correct response: *She would go to the pharmacy to buy him something to drink or eat.*

*Test 12: Measure of students' intonation and flow of speech ratings on the two speaking tests (measures 1 and 4).*

French skills measured: Intonation and flow of speech

Students' intonation and flow of speech for each sentence was rated on a scale from 0 to 5 for this test, and the mean was then converted to a percentage score.