

Child Development and the English Language Classroom: Age as a Factor in Learning with Songs and Chants

Larry Kimber*
Derrick Apple**

Abstract

A qualitative study was conducted among teachers and students at a children's English language school in western Japan. Building on the results of a previous investigation, which was from the perspective of teachers (Kimber & Apple, 2014), in this study, English language lessons with children between the ages of 3–11 were carefully observed so that reactions to music-oriented learning could be documented. The overall purpose was to gauge the effect of songs and chants have by monitoring when, how, and with whom teachers use these, and how its effectiveness varies depending on students' age. It is apparent that children sing less in the classroom as they progress through adolescence and into adulthood, but for the sake of maximizing learning potential and properly utilizing age-appropriate materials (i.e. songs, chants, flash cards), our goal is to outline with greater precision the nature of the changes that occur over time. The results of our analysis indicate the optimal time for learning

* Associate Professor, Faculty of Humanities, Fukuoka University

** English Language Instructor, Robin's Nest, Fukuoka

with math songs in the classroom is between the ages of 6–8. Preschool students, though musically inclined, showed a readily noticeable lack of interest in ‘math music.’ Finally, students in the upper elementary grades have lost their willingness to sing in the classroom, though their interest in using English to learn math remains strong.

Introduction

It has long been assumed that music plays an intricate role in education and even more so in the field of language acquisition (Melvin & Stout, 1987). If we observe children at play, it would appear to be in their nature to sing and use music, more than simply as a means of entertainment, but as a way to grow and learn. Of course, as we mature we tend to lose the inclination to sing out loud. Something happens to us in our lives, perhaps at a metacognitive level, and we change causing this method of learning with music to fade into the background while other methods become more prevalent.

In Japan, English education is in high demand, so much so that private schools have sprung up to fill the need for educating the young (Oda & Takada, 2005). Many parents in Japan have a strong desire to see their children become capable English speakers not only for future job prospects but as a way to fulfill the cultural drive to excel in studies overall. While English is often taught in public schools, there is an ever-present desire for students to have interactive conversations with native English speakers on a more personal level in hope that they can progress much more quickly. There is such a strong demand for English conversation schools in Japan that the competition to maintain the optimal amount of students mimics the competition on the level of major corporations. This level of competition drives English learning centers

to continually search for the most effective and efficient means to educate children and make learning enjoyable so students sign up and remain with the school as long as possible.

Since every school uses music at one time or another, there is an entire industry built around the idea of producing music-oriented teaching tools and materials. Many independent companies compose and create music for the classroom, producing flash cards and even student workbooks. These companies must strive to supply educators with learning tools that are beneficial and entertaining for the target audience.

Various teaching materials are supplied heavily by the music side of the educational industry. These include, in addition to the more traditional educational ‘songs,’ ‘jazz chants,’ which are also very popular among teachers and widely used within children’s English classrooms. Jazz chants and other music-oriented learning materials are of particular interest to schools from an educational aspect and are also important for the motivation of students – to keep them interested in their studies. Jazz chants are designed to teach English phrases, concepts or vocabulary and differ in style depending on the content being presented. Although ‘songs’ naturally involve the production of melodic tones, ‘chants’ by definition are different. However, there is a great variety of jazz chants in use at present. Some are intended for vocal output that relies heavily on vivid expression; others are more monotone and rhythmic.

As revealed in our previous study, songs and the more lively jazz chants seem to appeal to a younger audience while older students favor the rhythmic chorus repetition style of jazz chant. It was also found that math chants were of particular interest due to the flexibility available to the teacher. Teachers can use the math chant as a singing exercise, a repetition practice done in chorus,

or use the cards in more deductive ways, such as solving the equation independently. In this study, we went into the classroom with the intention of observing students and teachers in order to get an even better understanding of age-appropriateness and various teaching styles, and to augment the findings of our recently conducted teacher survey.

Literature Review

There are various avenues one might explore in documenting how music is deemed effective for language learning. The theory of experiential learning, well known as a result of the work of scholars such as John Dewey, David Kolb and others, teaches us that we ‘learn by doing.’ Music in education is indicative of the principle behind this axiom, and as Passarelli and Kolb argue, the typical classroom style of having students memorize discrete points and demonstrate knowledge of these on paper tests ignores the value of music in learning (2011). Music encompasses more than feelings; it goes far beyond the simplistic conjecture that it is an outlet for emotions and other forms of expression; it is one of multiple aspects of human intelligence, as Gardner concurs (1983). The capacity to interact with and develop skills in music is thus one of many elements of a child’s multifaceted intelligence profile and its value in the classroom is unmistakable.

The *input hypothesis*, proposed by Krashen (1982) as a key component of his Monitor Model, teaches us that when comprehensible input is available, acquisition will proceed naturally and effectively, especially if the medium used to present the input (fun songs) is appealing. Songs for children are normally provided within an anxiety-free situation, which is to say, instead of students being required to produce output, such as speaking in front of their peers,

singing within a group with the freedom to sing as one likes, should have a positive effect emotionally. This coincides with Krashen's *affective filter hypothesis*, which states that if the learner is in a learning situation where there is uneasiness of any sort, the input will not be acquired as effectively as it would if the atmosphere were relaxed (ibid).

Practical knowledge of the three modes of learning, Visual, Audio, and Kinesthetic, are important for foreign language classroom teachers, and as Dörnyei explains, normally one or two work best for a given student (2005). When we tailor language classroom activities to appeal to a student's particular strength, such as audio learning for example, there is a greater effectiveness and the student learns much faster than he or she would using a visual technique by itself. Dörnyei also states that some students may use a mixture of learning techniques but ultimately lean towards one or another even on some small level (2005). What is not touched on by Dörnyei is whether or not students change over time and then begin to rely on one type of learning that had not previously been favored when they were children. For example a child may start out as a strong audio learner and then become more of a visual learner as they grow older. The idea that a person changes and will benefit from other styles of learning as they continue to grow directly affects teachers and their desire to have a curriculum that fits best with their students. Understanding more about when that change might occur is necessary if we want to be effective educators.

The age of an individual affects their language learning potential. Many studies have supported Chomsky's original idea that there is a critical age of learning in which children can acquire language quickly and effectively compared to adults (e.g. Miralpeix, 2006; Haznedar and Gavruseva, 2008; Johnson

and Newport, 1989, 1991). However, others have compared the variety of studies that approach the issue of ‘critical age’ and conclude that a consensus certainly does not exist (Shin, 2013; Lightbown & Spada, 2013). Nevertheless, it would seem that after students approach and pass puberty, new approaches to language learning pedagogy are required – ones that keep in touch with the maturing process young people are experiencing. Age is an undeniable factor in determining how teachers teach. The way children learn a second language is very different than the way adults do.

Becoming more specific on how pedagogy is affected by age, Bauer, Holmes, and Warren (2006) discuss popular trends among educators exploring this theme. Highlighting age ranges one by one, they explain the limitations and advantages in language learning each of those groups experience. Their work is helpful in that it goes beyond the idea of a critical period of language acquisition and shows us that there are many changes that occur leading up to puberty. Lightbown and Spada inform us how studies on this theme have documented changes in child and adolescent performance on various speech tasks, such as pronunciation and storytelling (2013). The results show that children of different age ranges possess, on average, different potential, which can help us understand the need to create teaching aids that appeal to the strengths common to each age group.

Closely related to the topic of age and how it affects language acquisition is “educational music.” Richard-Amato (1996) explains that music can be a key tool used to educate children. The use of music seems to help the learners relax and become ready to approach language without the obstructions of overthinking the situation as if it were a logical problem to be solved. Others have noted its value in helping children develop stronger pronunciation skills and

build vocabulary (Forster, 2006; Zhang, 2011). Its effectiveness is clear and experience teaches us children are very open to the idea of music in the classroom, though once again the question remains, “for how long?”

One of the premises of the highly successful and influential ‘language immersion education’ involves recognition of the value of learning a subject area *with* a foreign language (Swain & Johnson, 1997; Kinberg, 2001). In other words, instead of making the target language itself the object of study, the L2 is the medium used to learn a subject such as social studies, science or mathematics. At English conversation schools in Japan that specialize in childhood education, studying math with English seems to be catching on. It should be noted, however, that since we are outside the public school system, and math is not taught as a bona fide school course, we cannot label the method “immersion.” The principle behind it, though, similar to that of immersion, is that instead of making a language the object of study, learning about the world with the target language is an excellent way to develop cognitively and linguistically.

Math is a good subject to study a foreign/second language with via immersion or immersion-like methods because it is universal – we all have some foreknowledge of it. For example, learning numbers and equations in English would be easier than starting from scratch and learning new concepts and terminology about other subjects such as history or biology. Mathematical notation is used worldwide; on the contrary, children in some areas of the world may not even know about the animals or plants being presented in western-oriented flash cards. Math, therefore, seems to be the perfect subject to learn within the medium of a foreign language, which is why we continue to use music-assisted math as a gauge by which to determine when students grow tired of simply singing along with the teacher, desiring to use deductive skills in-

stead for more challenging tasks such as problem solving.

It was previously learned via a survey of educators at an English language school in Japan that children start to become less interested in singing songs along with the teacher by the 3rd grade (Kimber and Apple, 2014). In that study, only one of the surveyed teachers felt that music was still effective for 4th grade students and all agreed that music-oriented teaching was not an effective method for students in the 5th and 6th grade. When asked about the students' willingness to sing math songs, teachers noted that students in the 1st through 3rd grade did not show any resistance to singing math songs with the teacher, unlike those in higher grades.

If children change their attitude toward music once they reach a certain age, then there must be a cause and symptoms that go along with this change with regard to cognitive maturation; in particular, their developing math abilities. Siegler & Jenkins (1989) report that while children start off using multiple strategies to answer math questions, such as counting on their fingers and pure retrieval, they later rely on a deductive strategies for solving equations. They also note various differences in the way children in kindergarten and those in the 2nd grade, approach problem solving tasks (Ibid, 1989). Their findings do not touch on the influence of music in math, but we feel that song might be one of the multiple strategies preschool students appropriate. As they grow older, we believe there will be a diminishing desire to learn math by singing aloud, which would not be considered a deductive strategy.

Children develop more complex cognitive strategies as they develop physically and their mental faculties expand. There is in fact a window for music-skill development. A child begins melody singing around the age of three and by the age of eight this development ceases (Gembris, 2006; Davidson, 1994,

Davidson & Scripp, 1990). It was also mentioned that unless specific training takes place, an adult will maintain the same singing ability they had when they were eight to ten years of age (Gembris, 2006). While this describes what is physically going on in the brain it does not offer us any socio-psychological reasons for why children may not be inclined to sing.

Even though children are physically changing, there are also social and motivational factors to consider. McPherson (2000) reports on a study which involved 133 students between the ages of seven and nine to determine the value they placed on learning to play a musical instrument. It was noted that many of these students equated this to participating in a sport or hobby. They felt that music did not have a bearing on long-term goals or career interests unless they were one of the few who wanted to become a professional musician.

Eccles (1983) states that one of the contributing factors to overall motivation was whether or not the success or failure associated with a task has any bearing on a person's life. In a related study, Wigfield et al (1989) show students in the 1st grade place high importance on all subjects, and yet music is slightly lower than the rest. In this same study, 4th grade students maintained that all but one of the school subjects are of great importance. The only subject not valued was music, which had dropped to half of what was reported by 1st grade students. As students mature, therefore, they are more motivated to study subjects they deem necessary for academic success.

Methodology

The main research question we seek to answer is, "how do English students at a conversation school in western Japan respond to songs or chants in

the classroom based on student age, teaching style and subject being taught?” We first hypothesize that, in light of our previous study, a change will occur at about the Grade 3 level where students will likely stop singing altogether or do so with far less enthusiasm than younger students have. With regard to teaching style, our second hypothesis is that regardless of the teacher’s ability to motivate students or create a lively atmosphere, Grade 3 and older students will still lose their willingness to sing. Finally, as we consider the effect of learning math in English, our third hypothesis is that preschool students (‘Kids’) will not have sufficient cognitive ability to participate with eagerness and will remain relatively quiet should math songs be used in the class. Older students in the upper elementary grades, though not expected to sing math songs, will likely display a relatively strong interest in math and be motivated by the challenge of solving problems.

The method we used to investigate this question was classroom observations. May contends that as simple as the term “observing” may seem, to engage in research of this nature is “the most personally demanding and analytically difficult method of social research to undertake” (2001, p. 153). However, we also must note that the learning environment is one which the researchers are sufficiently familiar with and as a result of watching, listening, note taking and subsequent confirmation of findings by reviewing the audio recordings, the method proved to be more than satisfactory for our purposes.

The classroom environments that were observed totaled 13, taught by three different teachers. The study was conducted at the same language school that cooperated with us in our previous work (Kimber & Apple, 2014). Three types of classes were involved; Low Elementary (Grades 1–3), High Elementary (Grades 4–6), and Kids (preschool). The total number of classes studied

is as follows: four Kids, five Low Elementary and four High Elementary classes, and for each category, the number of students observed were: Kids, 12; Low Elementary, 20; High Elementary, 22.

We noted students' reactions to the educators' style of teaching and their desire to participate in class. These reactions include, but are not limited to, attention span, level of enjoyment, willingness to sing along with the teacher, and ambition. The ability of each child to answer the questions, their general knowledge of English, and the time spent on each chant, set of flash cards, and other activities were also recorded. We also listened to see how the students and teacher spoke, i.e., with natural intonation and enthusiasm or with a monotone rhythmic style.

Ethical issues were taken into consideration. Permission was received from the owner of the school to audiotape the classes with the stipulation that under no circumstances should the audio be made public. All precautions were thus taken to ensure this request was followed.

After each class the teachers were briefly interviewed and asked questions regarding their opinion on how the students are progressing and performing. These conversations were recorded as well. The bearing that age has on the effectiveness of using music in the classroom; i.e., the age in which children enjoy singing along with the teacher, was also a part of this conversation. Each teacher was also encouraged to reveal their feelings toward each class and add comments about the behavior and ability of students. Informally interviewing the teachers between classes gave us the chance to question them while events were fresh in their minds.

Each teacher has a unique personality that affects their teaching methods and approach. Just how these differences impact the classroom and students'

willingness to sing along with the teacher will be explored later on. The teachers will now be introduced (pseudonyms have been used).

Brian is very vocal and passionate when it comes to interacting with the children. He is an energetic individual with a good deal of experience in teaching. While entertaining and fun, Brian also maintains order in the classroom with his commanding presence and fast-paced style of teaching.

The next teacher, Chris, possesses a gentle nature and approaches the students calmly. His approach is methodical and he moves through the classroom material at a relaxed pace. This teacher's voice is rhythmic and he chooses to lean towards chants and interactive games while still using song when necessary. Though his presence isn't imposing, the students follow Chris's example of calm behavior and classroom order is well maintained.

Alison, is kind, gentle and full of smiles. Classroom order is maintained by her pleasant nature and a warm atmosphere that seems very appealing to the students. Her teaching method is fun and she seems to enjoy using chants and music in the classroom. Alison's voice is very lyrical with plenty of intonation, yet she is soft-spoken. A stern voice and overbearing presence does not seem to be required to enforce classroom rules.

Findings

Kids

First we look at information gathered by observing Kids classes. These classes consist of students that are not yet in elementary school and are typically between the ages of 3–6. The reactions of the children while practicing math chants will be compared to those of elementary students. The teaching method employed will also be noted.

In Brian's Kids class there were five students, three were five years old, one was six and another was three. The math portion of this lesson lasted 1 : 08 minutes. Brian presented the math flash cards while singing along with the music. All students sang along and did so with enthusiasm except for the three-year-old, who laid his head on the table, did not sing and was distracted. Brian did not choose to quiz his students and only did the singing activity once.

In Alison's Kids class the regular students were all absent; the only child, a three-year-old, was new that day. The math portion of the lesson lasted for 4 : 00 minutes. The teacher started off with an interactive game involving small plastic bingo chips of various colors. The student seemed very happy counting the chips with the teacher but would not speak out loud. When Alison began to present the math flash cards and sing, the student's attitude changed. She placed her head on the table and did not participate at all.

There were four students in Chris's first Kids class. Two of them were three years old, one student was four and another was two. The math portion of the lesson lasted for 2 : 04 minutes. The teacher started by presenting the math flash cards and singing along with the music. The children did not sing along with the teacher and when the teacher quizzed the students to see if they were able to answer the questions, they were not able to do so. The children did not look like they enjoyed the math portion of the lesson. They were constantly distracted and looking around the room.

Chris's second Kids class consisted of two students, ages three and four, and the math portion of the lesson lasted for 2 : 05 minutes. The teacher started off by presenting the flash cards and singing along with the music. Both children sang in a quiet voice with their heads resting in their hands, el-

bows on the table. Chris then reviewed the math flash cards without the music. The three-year-old student repeated after the teacher but the four-year-old remained silent even when Chris tried to encourage him.

Overall, children were not able to participate in the math portion of the lesson. Singing here was almost non-existent in Kids ages 3–4 and the students did not seem to understand the math equations. They were, however, able to participate in other songs and chants of lesser difficulty. Their attitude toward math songs was much more somber when compared to other songs. Children ages 5 and up seem more likely to sing math songs than students ages 3–4.

Low Elementary

Low Elementary, for the purpose of this study, is defined as classes mainly consisting of elementary school students in the 1st, 2nd and 3rd grade between the ages of 6–9. In comparison with Kids, there were definite changes in teaching tactics and responses of the children.

Brian had two Low Elementary classes. The first class consisted of four students, two in the 1st grade and two in the 2nd grade. The math portion of the lesson lasted for 1:17 minutes, during which Brian chose to simply present the math flash cards and have the students sing along with the teacher. In the first class all four students sang along with the teacher and participated well.

The second class consisted of three students, all of which were in the third grade. The math portion of the lesson lasted 2:10 minutes. First he presented the flash cards and had the children sing along and then tested the children without music to see how well they solved the math equations. The students, all in the 3rd grade, sang along with the teacher, but in monotone voices

and did not seem to enjoy singing as much as the previous class. When tested, the children were able to read the cards out loud by themselves and solve the equation without seeing the answer. All students participated in the test keeping their monotone voices.

Alison had one low elementary class that consisted of four students; two were in the 2nd grade, one was in the 3rd grade and another was in Grade 4. The math portion of this lesson lasted for 4 : 44 minutes and consisted of three parts. First the teacher presented the flash cards and had the students practice saying the answers, (i.e., 4, 8, 12, 16), without reading the complete equation (i.e., $2 \times 4 = 8$). All students participated but the 4th grade student tried to be first, making it a competition. Alison then presented the flash cards and had the students sing along with the teacher. The 2nd and 3rd grade students sang along well, but the 4th grade student refused to sing. Lastly, the teacher quizzed the students to see who could solve the equations without seeing the answers. All of the students did this well, but the 4th grade student, very competitive in this situation, tried his hardest to always answer first.

Two Low Elementary classes taught by Chris were observed. The first class consisted of four students, three were in the 2nd grade and one was in the 3rd. The math portion of this class lasted for 1 : 49 minutes. The teacher started by presenting the flash cards and having students sing along with the teacher. All students did sing along and seemed reasonably happy to do so. The teacher then quizzed the students to see if they could read the answers on their own (i.e., 4, 8, 12, 16) and not the whole equation (i.e. $2 \times 4 = 8$). All of the students could do this but one of the 2nd graders and the 3rd grader seemed to be in competition to see who could answer first.

Chris's second Low Elementary class consisted of five students, four of

which were in the first grade; the fifth student was a six-year-old that had not yet joined public school. The math portion of this class lasted for 1 : 56 minutes. The teacher presented the flash cards and had the children sing along with the teacher, which they all did for the entire duration of the song.

The children in Low Elementary seemed much more willing to participate in math and sing along with the teacher than students in Kids class. In Alison's class the 4th grader did not wish to sing along with the teacher but preferred being quizzed instead. Students in the 1st, 2nd and 3rd grade also participated well in other non-math based songs and chants.

High Elementary

High Elementary mainly consists of children in the 4th, 5th and 6th grade, ages 9–11. Teaching methods change again, with teachers relying somewhat more on deductive skills with students of this age range.

Brian's High Elementary class consisted of four students, three in the 5th and one in the 6th. The math portion of this class lasted for 1 : 28 minutes. The teacher presented the flash cards and singled out one student at a time to read the entire equation, including the answer, as it appeared on the card. Each student did so while the 6th grade student was more eager to participate and tried to finish faster than the other students.

Six students were in Alison's first High Elementary class, four 4th graders and two 3rd graders. She chose to forgo the math portion of this lesson as well as the workbook due to time constraints. While talking with Alison after her classes, she said she felt the older students would most likely not sing math songs. She tried to have the students sing five different songs/chants, however they did not participate. Her second High Elementary class consisted of six stu-

dents, four 4th graders, one 3rd grader and one in Grade 1. The math portion of this class lasted for 4 : 27 minutes. The teacher started by presenting the flash cards and having the students read the numbers aloud. All students participated and rushed to read the answers. Then Alison presented the flash cards with music playing in the background. None of the students sang along with the teacher though a few of them mumbled slightly. Finally the teacher quizzed the students one by one and each of them participated well.

Chris's High Elementary class consisted of six students, three of which were in the 4th grade, two in the 5th grade and one in Grade 6. The math portion of this class lasted for 1 : 27 minutes. The teacher started with presenting flash cards and having the children read the math equations in rhythmic chorus without music playing in the background. The children did so in monotone voices and appeared to lack enthusiasm. Next, the teacher shuffled the flash cards and quizzed the students by having them answer random equations. The children seemed to enjoy this more and two of the students, a 4th and a 6th grader, became competitive with the other students.

The children in High Elementary classes did not wish to sing. Students still participated very well when the teaching style changed and relied more on quizzes. Even though all of the teachers have very different personalities, this did not cause the children to sing in any of the High Elementary classes despite their best efforts.

Discussion

Math too difficult for Kids

Students in the Kids classes have just started melody reproduction and are well within the developmental phase (ages 3–8) when it comes to singing

(Gembris, 2008 ; Davidson, 1994). While not averse to singing in general, the younger children almost never sang math songs with the teacher, though older students, ages five to six, were more willing to participate. One of the factors is perhaps difficulty. Because the students have not yet been exposed to mathematics, they do not have the ability to understand what is being presented. We are reminded of the second language acquisition theories attributed to Krashen, and in particular his input hypothesis (1982). Ideal input ought to be slightly above students' present learning capability; in the case of this study, the math songs/chants appeared to be well above what the students were mentally able to interact with. Our third hypothesis about Kids not being ready to sing math songs is thus supported.

Elementary students are always developing in terms of math strategy as Siegler & Jenkins tell us (1989), so it is expected that each age range would respond to music differently. They also point out that while younger students utilize a variety of approaches to solving a math equation, such as counting on their fingers, as they grow older, they begin to rely on advanced strategies and retrieval more often (Ibid, 1989). We noted that in Alison's Kids class younger children respond well to counting out bingo chips by hand. This is a very basic form of math children can understand. Counting flash cards with pictures, such as apples or cats, are also very useful and appeal to a wider age range. Students can practice counting the number of objects while older students may enjoy the challenge of addition and subtraction.

Low Elementary sings math

During Low Elementary classes, children now sing math songs just like any other song or chant. 3rd grade students begin to show signs of unwilling-

ness to sing as their voice becomes more monotone and less enthusiastic. Children in the 3rd grade, eight years of age, have now reached, or soon will reach, the end of the vocal-music development stage. At the same time, these students are changing in their attitude towards math. We noted that the 4th grader in Alison's Low Elementary class had a strong desire to answer before the other students but completely refused to sing along with the teacher. This is a strong indicator that the child has left his vocal-music development phase and is now more drawn toward participating in learning activities that require deductive thinking. Students in the 1st, 2nd and 3rd grade do seem to benefit from math-based-music, though a little less by the 3rd grade. As was noted in the observations of teachers, offering up a few simple math quizzes on top of singing helps cater to older students' learning styles, without discouraging the younger ones.

High Elementary refuses to sing

In the High Elementary classes, although the children are competitive and desire to participate in math quizzes, there is no singing along with the teacher. In fact, not only do students stop singing math, they refuse to sing other songs as well. Simple chants, such as repeating in chorus, also become sluggish and monotone. This finding is clearly supportive of our first hypothesis. These students are well out of their vocal-music development phase, and as McPherson suggests (2000), they may have lost interest in music due to factors other than cognitive development. A lack of motivation to sing in class may be caused by a perceived loss of necessity. Now that children can achieve success without song, they choose to challenge themselves mentally and grow their deductive reasoning ability. Wigfield et al (1989) seem to agree with this

idea, demonstrating in their study of children in public schools that a tremendous drop in participation in music class occurs, while other subjects are still viewed as being important. We thus argue that High Elementary students come to value music less and less as new learning strategies become more prominent.

The best approach for High Elementary students is to continue to challenge them with increasingly difficult equations to solve and longer strings of numbers for them to practice reciting. Attempts to force them to sing in class will very likely be met with heavy resistance.

The effect of teaching style

Personalities of individual teachers appeared to have little effect on student participation when it came to music. In Kids class, none of the teachers seemed to have any problems convincing students to sing, except when faced with math songs. Kids students did not participate in this area. In Low Elementary, students seemed to enjoy singing all songs, including math songs, regardless of the teacher being calm or enthusiastic. Only one teacher (Alison) attempted to get her High Elementary students to sing math songs, and her endeavor did not prove to be successful. The other two, having tried in the past, had now given up. Our second hypothesis is supported in light of this finding. All of the teachers, when interviewed about math songs in the classroom, seem to share the same opinion that music-assisted math is quickly outgrown by students in this age-range.

Applications

The information gathered here shows that it may not be suitable to mix

students of one age range with another. For example, it may be unwise to place a 5th grader among Low Elementary students. In this situation the 5th grader will not likely sing and may even be a dominating force in the class causing other students to stumble or recoil. Likewise, placing a 2nd grader in a High Elementary class may also prove to be an unfit situation as this student is no longer in a context that fuels his/her vocal-music development phase. Since Kids, Low Elementary and High Elementary students are all in different stages of development, it is best to keep these categorizes from intermingling.

Finally, our findings offer teachers and supervisors/managers insights into how they might develop effective strategies for implementing the best mix of music and math in English classes. When it comes to math, Alison's teaching method of adding and subtracting bingo chips with a 3-year-old, instead of using flash cards with numerals printed on them is a good example of how input must be at a comprehensible level for students. Metacognitive awareness grows dramatically once children enter Grade 1, so written numbers are best added to teaching materials then. We contend that the window for using songs in language learning extends until about the age of eight. This does not mean students do not like music after that, but that attempts to force singing on them are very likely to meet with failure. Since we have not examined the question of whether or not High Elementary students seem to benefit from *listening* to educational music, we are not claiming in any way that music has no value for students who reach the age of nine. Our suggestion is that teachers apply caution when selecting musical materials for students who reach this age, so that students maintain their motivation and the classroom environment remains positive.

Conclusion

In this article we conducted a qualitative study involving three different teachers and 54 students between the ages of 3–11 at an English language school in western Japan. Complementing a prior study that solicited the thoughts of teachers on songs/chants in the English language classroom (Kimber & Apple, 2014), the goal of the present investigation was to verify some of these findings through observations and to ascertain what age ranges appeared to benefit the most from music. We also documented the methods used by teachers for each of the different classroom categories, Kids, Low Elementary and High Elementary.

The results indicated that in Kids classes, although students ages 5–6 sang along with the teacher, younger ones were unable to take part in math-oriented singing exercises; we feel this is best explained by underdevelopment of their cognitive ability. Children in Low Elementary classes participated in singing along with the teacher and math quizzes though their singing had become noticeably less enthusiastic by the 3rd grade. Students in the 4th, 5th and 6th grade no longer wished to sing along with the teacher but still desired to solve math equations and answer quizzes.

Our observations support what the literature also indicates – that multiple changes, whether physical, cognitive and/or socio-psychological, are occurring within children at the same time their willingness to sing starts to decline. Suggestions were thus made with regard to maximizing the effectiveness of teaching methods by taking into consideration how combinations of the factors of math, music and age can have an impact on foreign language learning.

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