



RHYME, RHYTHM, AND THE THREE R'S: THE CREATIVE PROCESS OF DEVELOPING CURRICULUM-BASED SONGS FOR THE CLASSROOM

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While many national curricula emphasize the importance of the arts in education, and using song is a popular method to teach a second language, song is not commonly used in the general classroom as a teaching tool. Several possible reasons for this are teachers' lack of confidence in their own musical capabilities and the scarcity of available materials, but more importantly, their lack of training and expertise in the song-writing process. This paper aims to provide useful advice and methods for educators by presenting a literature review on the benefits of using song to learn, and describing one model for creating songs for the classroom, drawn from over two decades of experience.

Keywords: Song, Curriculum-based song, Teaching materials.

Introduction

Song has been an integral part of human civilisation and culture since language first evolved (Levitin, 2008). The combination of words and melody has been used to connect with others, for entertainment, ceremony, and worship. Historically, song is utilised to pass on information, from mothers' lullabies to the epic poems and songs of illiterate societies. African *griots* sing their tribe's history, sailors tell stories through sea shanties, and the Australian Aborigines' song-lines are used as oral maps to navigate the continent (Dyer, 2009).

Song permeates our world today, connecting us across borders of geography, culture and language, helping us to express our lives and emotions. Popular music is the sound track of our students' lives in the ever-expanding world of media and mass communication (J. H. Lee, 2015), while music play lists are an expression of their developing personal identities and style (Stålhammar, 2006). In 2014 83% of 16-24 year olds used YouTube as a music platform, while 56% used iTunes or the radio (MacLeod, 2014), showing an ever-growing increase in digital music consumption.

Using song to learn is clearly beneficial, as evidenced in many research studies, as well as presenting curriculum materials via our students' preferred method of communication and entertainment. Audio linked to visuals or text is a popular medium for learning (Sankey, Birch, & Gardiner, 2010), while multimedia learning, sometimes termed 'Edutainment' or mobile learning, combines traditional content with modern learning technologies (Chachil, 2015). The use of podcasts, where information can be downloaded at any time, can supplement classroom learning in an interactive, engaging and experiential learning method (Anikina, 2015). Mobile devices are becoming increasingly common in schools, and while not a solution to all the problems of twenty-first century education, are shown to support student

academic growth and empowerment (Mouza, 2015). Song can be presented as a portable, multimodal learning experience, enhancing student engagement and access to materials.

Literature Review: The Benefits of Singing in Learning

Multiple studies report benefits of singing in the context of learning (Hallam, 2010). The integration of rhyme, rhythm and melody has been shown to be beneficial to students' learning processes and their retention of curriculum (Iwasaki, 2013). Music may serve as a hook to gain students' attention, while presenting information through multiple channels simultaneously (reading / visual, hearing / auditory, and singing) may lead to more total information being absorbed into working memory (G. Crowther, Williamson, J., Buckland, H., Cunningham, S., 2013). Students with different learning styles, as described by Gardner's multiple intelligences (Gardner, 2006), often respond well to this alternative low-stress pedagogy.

Other benefits include enhanced retention of materials (Butler & Newman, 2008; Hayes, 2009; Pindale, 2013), and improved student attitudes and socialization in the classroom (Brouillette, 2009; Hallam, 2010). Social inclusion (a sense of self and social integration) was enhanced for primary students in England by participation in the "Sing Up" programme (Welch, 2014), a result mirrored by improved social skills and behaviour in a Finnish study of a teacher-artist collaboration in a third grade class (Ruokonen, 2015).

Using music in the classroom improves test scores. An American survey of standardized test results of almost 7,000 students in Pennsylvania showed that students involved in music scored significantly higher on a variety of academic measures (Thornton, 2013). An analysis of four national databases in the U.S. found that low socioeconomic students with arts-rich experiences improved their social and academic outcomes, attended college in greater numbers, achieved higher grades, and were more likely to earn mostly A's in college (Catterall, Dumais, & Hampden-Thompson, 2012; Doyle, 2014), while an arts-integrated programme in Maryland for minority and low-income students over three years reduced the reading test score gap by 14% and the math gap by 26% (Dwyer, 2011, p. 3). A study into using original curriculum based songs for middle school students in social studies, math and Spanish proved that the average scores were consistently higher for the students who used the songs to learn, especially in social studies (music / song group - 80.29%, control group - 60.84%) (Scro, 2006).

Teachers who use original song lyrics in their classrooms report successful results in a variety of subjects and grade levels (Baker, 2011; Bintz, 2010; Butler & Newman, 2008; Ciecierski & Bintz, 2012; G. Crowther, 2011; Estevez, 2014; Fagan, 2007; Kimmel, 1998; Last, 2009; Scro, 2006). At the tertiary level in Canada, the Department of Mining Engineering at the University of British Columbia has used songs for seventeen years to teach a variety of mining related subjects. Each week a new song is taught to highlight that week's studies, including aquatic chemistry, sustainable development, and poverty alleviation in developing countries (Veiga, 2015).

Learning a second language using songs improves motivation, memory, comprehension, and fluency (Ajibade & Ndububa, 2008; Baoan, 2008; Contreras & Flores, 2010; Li, 2009). Lee writes that most people learn song lyrics faster than words (L. Lee, Lin, Shu-Chuan, 2015). When adults learned an unfamiliar language (Hungarian) by listening then either speaking, rhythmic speaking, or singing, their results were significantly improved by listening and singing (Ludke, 2013). This study demonstrates that pitch as well as rhythm is beneficial to learning.

Repeated retrieval of information, such as listening to and singing of songs on a regular basis, promotes learning, and aids memorization (Karpicke, 2012). Research shows that songs with repetitive lyrics are processed with greater fluency (Nunes, 2014). The neural networks that serve musical behaviours are widely distributed through the brain (Hodges, 2007), utilising more of the brain while learning than when reading or listening, again enhancing retention (Pallesen et al., 2010).

Almost 20% of school students have some form of dyslexia or language disability (Fletcher, 2009). Students who have difficulty with absorbing new materials find that song is a non-stressful medium for

learning, and that multisensory learning by singing is easier than decoding text (Bates, 2013). When lyrics and song are integrated as a learning strategy, memory and recall improve, particularly for learning and mildly handicapped students (Hayes, 2009). Chiengchana (2014) found that Kodály-based / singing experiences were beneficial for students with autism spectrum disorders, especially in attention and learning to engage in a group setting.

The Challenge for Teachers

Numerous studies report the benefits of using song to teach, and song is frequently taught in primary and elementary schools and language classes. However, song is not a common pedagogical practice in Western middle school general classrooms. While many educational authorities promote cross-cultural and cross-disciplinary studies (Haseman & Jaaniste, 2008), currently there are few resources or teacher training courses to enable teachers to feel confident in teaching through songs (Komur, 2005).

Many teachers do not feel comfortable about their singing skills in front of their classes (Garvis & Pendergast, 2012; Sevik, 2011). Macias (2008) suggests further reasons for teachers' reluctance to use song, such as concern about noise levels and behaviour, disturbing other classes, lack of teacher expertise, and fear of detracting from the main curriculum, or wasting time. Studies into the use of arts and music integration in the general classroom in the American states of North Dakota and Utah found that while teachers feel that arts integration supports both the arts and non-arts subjects, they vary in their use of music in their teaching. Teachers cited such reasons as lack of time, deficiencies in their own musical training, the lack of collaboration with the music teacher, insufficient training in arts integration, and a lack of support from both teachers and administrators (May, 2015; O'Keefe, 2015).

For teachers who feel they have inadequate singing skills, it is important to recognise the distinction between teaching singing and using song (Trinick, 2012). The use of CDs or music files removes the need for teachers to sing, and, as an extra benefit, provides portable materials that can be accessed via phone, tablet or computer anywhere. If teachers write songs for their classes, they can ask the music teacher(s) in their school to collaborate to notate and record the materials. There are also various online resources for finding original songs for teaching. This is an innovative area in education that can grow with grants and support for musical curriculum materials development.

A Guide to Writing Teaching Songs

I have been composing lyrics and music for teaching songs for over two decades in Australia and the United States. I have worked in a variety of school systems, as a composer in residence in schools, and for home school groups and choruses. Original works include Homer's "Odyssey", a history of the Renaissance, "Eureka! – a history of invention", "Dreams and Heroes – African-American History", and songs about science, ancient civilisations, Aesop's fables, geography and physics.

Victorian era education was often described as the "Three R's: Reading, 'Riting and 'Rithmetic". I think of songwriting as a different set of Three R's: Rhyme, Rhythm, and Relevancy.

R is for Relevancy

As the songs are intended to support classroom learning, they need to be based on school, state, or national curricula. These outline required classroom objectives, often including vocabulary lists and learning outcomes. List the essential facts and vocabulary or terms that the students are expected to know and retain, and rank them in order of importance. Depending on how much information is considered important, it may be necessary to write more than one song on a single topic. Students then do not have to remember too many verses of words to the same melody, which can lead to confusion.

Once the indispensable facts and terms are ranked, the lyric-writing process begins with creating lists of rhymes for the essential words.

R is for Rhyme

Rhyme is when two or more lines of lyrics or poetry end with the same corresponding sound, which enables the singers or listeners to remember the words more easily (Butler & Newman, 2008). It is very useful to use a rhyming dictionary, such as the Whitfield's University Rhyming Dictionary.

One writing method is to list the most important words, and find rhyming words that are relevant to the topic. Obviously the important word will not always occur at the end of a line, but listing the rhymes helps to start the process of linking words together in a sentence. It can help memorisation to include internal rhymes, or rhyming words within a line, e.g.:

“Circe begged for mercy; he made her swear
To reverse the curse she'd laid on his sailors there.
Back to men they changed again, better than before,
A year they stayed before they made their farewells once more.”

Circe the Enchantress - vs.3, Homer's Odyssey © Aniko Debreceeny 1996

As well as lists of rhymed terms, also write out the basic facts that the students are required to learn in short phrases. Keeping to common speech patterns makes it easier for students to absorb and retain the information. Looking at the ‘fact phrases’ will also provide a list of other words that may be placed at the end of a sentence or lyric line, and which need rhymes. This will also establish the order of facts in the song lyrics.

Then start writing rhyming couplets, pairs of lines usually of the same length and number of beats, which will usually then combine into four-line stanza form, with four strong accents or syllables in each line of lyrics.

Including as many as possible of the essential vocabulary words listed will help students remember the terms, their meaning, and context. To emphasize a few key facts, include them in a chorus. This repetition enhances retention, e.g.:

“Yes, a masterpiece from ancient Greece – democracy.
“Rule by the people”, all men equal – democracy.
In Athens in 510 BC – civic responsibility.
Important matters voted on, that is – democracy.”

Democracy – Chorus, Ancient Greece © Aniko Debreceeny 2015

“E equals M C squared, the E stands for Energy.
M is Mass and C the speed of light, Einstein's Theory of Relativity.”

Einstein – Chorus © Aniko Debreceeny 1993

R is for Rhythm

The spoken rhythm of the lyrics will determine the musical rhythm. Metre is the number of beats in each bar, while word rhythms fit into the basic beat or metre.

One method to create rhythm for lyrics is to write or print out the lyrics, writing a line above or below the important syllables or words. These will become the strong beats of the bars or measures of the song. It is then easier to allocate musical note values to the intervening words. Use longer lines for the important words/beats, and shorter lines for the others. To determine the strong accents, speak or chant the lines aloud. For example, the first line of “Home on the Range” would be “Oh, give me a home,

where the buffalo roam, and the deer and the antelope play". Those stronger accents are where the musical beats should occur (in musical notation, the first beat of each measure).

Once the lyrics are written, the next step in the process is to add melody. Many students and teachers are very successful with creating their own lyrics for learning set to well-known melodies, which are called parodies or "piggyback" songs. If you are musically confident, or have ample time, creating your own original melodies will also enhance the students' retention. Some studies show that using well-known melodies with new lyrics can lead to confusion over which set of lyrics to retrieve (Serafine, Davidson, Crowder, & Repp, 1986).

Write a similar number of syllables in each line as the original. It is more important to keep the same number of beats in each line, though the number of syllables (subdivisions of the beat) can be different from the original. If there are more syllables or words in the new line, the singers will have to sing them more quickly. This can be difficult for enunciation, especially for young students. With fewer syllables or words, lengthen some words to add emphasis, or repeat important words. Try to place important word accents on the first or strong beat(s) of the bars, rather than "and" or "the", etc., or unaccented weak syllables.

When writing for children we are faced with the dilemma of keeping songs short, simple and appealing to make them easy to learn and remember, yet also interesting and challenging for our students. Depending on the age of your classes, their vocal range will vary. The usually accepted preferred key for young children's voices is D major, with a limited range of six to eight notes (Johnson, 2012). When teaching boys whose voices have deepened, the songs must be in a key that is sing-able by both trebles and baritones. Research shows that boys often feel that singing is for girls (Warzecha, 2013) and won't sing in class, but that a passionate and enthusiastic teacher can overcome such attitudes (Ashley, 2013). If all else fails, the song can be taught as a rap.

Keep the songs simple. Short and succinct is best, to enable learning and memorization. Make sure the melody and tonality suit the lyrics, so that if the subject is happy, the music will be in a major key, while it will be minor if the subject is sad. Especially for younger singers, avoid awkward or large intervals between the melody notes. Interest can be added through harmony or word rhythms, or by adding instruments to the accompaniment. Repetition will help students to learn and retain the songs, both in repeated lyrics or melody, and in singing or listening on multiple occasions (Setia et al., 2012; Sevik, 2012).

Performing songs presents learning to the school and community in a fresh and engaging medium. Group singing leads to enjoyment and confidence, further enhancing the experience (Judd, 2013; Wheeler, 2014). Students can design banners, costumes, and props to accompany the performance. Another extension activity is to assign your students the task of writing another verse for the song on the same subject (Anton, 1990), or their own song on another topic. Collaborative composition can engage students as they create, produce and perform their own songs.

There are many teaching songs available online, but the majority are written for kindergarten and elementary students. Writing songs about your own subject area and curriculum will enable you to present lesson materials in an enjoyable and engaging manner, where your students sing together without realizing that they are memorizing facts and concepts.

Adding relevant visuals and graphics to create a multimedia presentation for your students will further enhance learning, as visual cues help us to better retain and retrieve information (Gangwer, 2009; Plotnik, 2013, p. 22; Sung & Mayer, 2012).

The Benefits of Using Multimedia Learning

Li Wu writes "Information technology has been termed as the medium of a new, and fourth revolution in human communication and cognition, matched in significance only by the prior three revolutions of language, writing, and print." (2006, p. 4).

A Turkish study found that using mobile phones for learning vocabulary had a significant positive effect on students' ability, also improving students' attitude and motivation (Suwantarathip, 2015). A Portuguese study showed that on average, 60-70% of English is learned outside the classroom, through exposure to television, music, and computer and video games (Tonoian, 2014). An Australian study discovered that though using a combination of learning environments did not improve quantitative scores, qualitative results showed improved comprehension, interest, and retention. Participants particularly preferred audio-enhanced PowerPoint presentations and interactive diagrams with transcripts and audio (Sankey et al., 2010).

These and other studies show that mass media is an unacknowledged new teaching tool that can be successfully employed in the classroom. Curriculum based songs can be presented via computer, mobile phone, or tablet.

Conclusion

Song is an effective tool for learning in the classroom. There are multiple benefits to using singing, including improved engagement, retention, and test scores. Teachers can follow guidelines to write relevant lyrics and rhythm and choose a suitable melody to create songs based on their own curriculum. Integrating original songs as a multimedia learning experience can enhance student engagement and learning.

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