The Development of a Vocal Warm-up Resource for Busy Teachers: creating a set of warm-up resource cards for teachers and directors of children's choirs

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Abstract

Following extensive, transdisciplinary research, a resource has been created to be used by teachers and choir directors when warming-up their choirs. Recent research into warm-ups, professional advice, and peer-reviewed evidence has been drawn upon to ensure the resource is both credible and valuable to the music profession. It is intended to be concise enough in its presentation to be implemented by busy teachers, with little time to complete this research themselves. Through previous research it has been discovered that conventional warm-up exercises, those which are devised by singing professionals and aimed, perhaps, at adult and auditioned youth choirs, are not well-received by youngsters. It was my intention to devise a more child-friendly set of warm-up exercises and present them in an easy-to-use format for the busy teacher. Consultation, via a questionnaire and the 'drum and marble' data collection method (Omotosho, 2014), of the children in my choir, has enabled me to devise child-friendly exercises which are at once, vocally appropriate, whilst being appealing to the demographic concerned. In this way I have been able to follow the process of understanding, theory, and change which lies at the heart of epistemological reflexivity (Ryan, 2005).

Key words children, singing, warm-ups, exercises, consultation, action research

Introduction

This paper charts the process of developing and testing a set of warm-up resource cards for teachers and directors of children's choirs to use when warming up their choirs. The resource has been produced as a result of research synthesis (Onwuegbuzie, Leech and Collins, 2012) in combination with the consultation of the children themselves, a form of action research where the children help to implement practical solutions to perceived problems (Meyer, 2000). The children in question sing in a 90-strong school choir of Year 7 and 8 girls (aged 11-13). Their evaluation of each exercise, gathered through a voting system and a questionnaire, enabled an effective, child-friendly resource to be created.

The need for vocal warm-ups can be justified by acknowledging that vocal pedagogues, both in books on singing and in research articles, advocate a vocal warm-up. Callaghan (2014) asserts that, 'the risk of vocal strain is minimized by warming up the voice before use', and both Titze (1993) and Miller (1990) give detailed information on an appropriate warm-up routine. Estill (1996) recommends sliding up and down the range using, 'thin

folds, a tilted thyroid and maximum effort' in order to achieve what Titze (1993) describes as 'a uniform vocal quality over a wide pitch range.' Davids and LaTour (2012) state that 'most choral conductors, teachers and singers agree that some sort of vocal warm-up is essential prior to the singing of repertoire' and Williams (2013) explains that warm-ups are essential for preventing injury, reinforcing good habits and focussing the mind and body on the matter in hand.

Books specifically on the subject of vocal warm-ups begin by justifying the need for them. They cover warm-ups as a starting ritual, to prepare the voice, and as voice training (Brewer, 2002; Litten, 2015; Heizmann, 2004; Knight, 2015; Lorse, 2016). In a study by Moorcroft and Kenny (2013), singers perceived significant changes in their tone quality, psychophysiological factors, proprioceptive feedback and technical command once they had undergone a vocal warm-up.

However, feedback from the 11-13 year-old children in my choir criticised my warm-up routine. Despite the children admitting that they derived benefit from completing a vocal warm-up before a rehearsal, many were critical of the actual nature of the warm-up exercises, branding them 'boring, repetitive and time-consuming.' This paper explains how I went about establishing a better-received warm-up routine which engaged more effectively with the children in my choir, and then created a set of warm-up resource cards for other teachers and choir directors to use.

Literature Review

A study conducted by Amir *et al.* found warm-ups had 'a significant and measurable influence on the vocal quality of young female singers' (2005). However, the consultation of children is a little-developed area of research in the world of choral singing. It has been identified that this age-group has a particular set of requirements, different from those of younger or older children (Freer, 2009), but warm-up books do not seem to address the needs of this particular age-group. Choir-trainers of these sorts of choirs are typically music teachers rather than vocal pedagogues with little time (and, perhaps, inclination) to research this area themselves. I have been pleased to be able to draw together a considerable depth of research into warm-ups, married with warm-ups which have been tested on this very age-group in an easy-to-use format.

Source-material for this resource included vocal pedagogy literature as well as that specifically concerning vocal warm-ups. Whilst the pedagogical books were written by long-established experts in the field of singing teaching, the books on vocal warm-ups tended to have been written by experts in choral conducting, some of whom claim an expertise in singing teaching too, for example Litten (2015), Lorse (2016) and Heizmann (2004). I uncovered a dichotomy of understanding of the vocal mechanism which led me to be cautious of some choral conducting experts who revealed scant understanding of some aspects of voice production. When evaluating such documents I have considered their credibility and representativeness (Platt, 1981; Scott, 1990; Denscombe, 2008).

I consulted several journals which address singing teaching (Journal of Voice; Journal of Singing), choral directing (The Choral Journal) and education (Music Educators Journal;

Journal of Research in Music Education; British Journal of Music Education; Journal of Education for Teaching; Oxford Review of Education) all of which have been pertinent to my work. This transdisciplinary approach has been essential as I have considered warm-up exercises rooted in researched vocal technique, and implemented them in a way that is attractive to Year 7 and 8 students whilst achieving the requirements of a choral vocal warm-up. In addition I have consulted journals on medicine (British Medical Journal; New England Journal of Medicine) and on sports medicine in particular (Journal of Science and Medicine in Sport; Sports Medicine; Strength and Conditioning Journal). Finally the Journal of Speech and Hearing Research has covered research on breathing (Watson and Hixon, 1985) with the Journal of Speech, Language, and Hearing Research containing an article on SOVT (Titze, 2005).

Frederickson identifies the possible problems experienced by student instrumentalists when they fail to warm up before practising. She says that musicians injure themselves more frequently than athletes as a result of overuse or misuse. She cites research which shows that 'almost half of a group of high-school-aged musicians reported symptoms of overuse injury' (Lockwood, 1989) and suggests a series of exercises which students can do to strengthen the muscles of the upper torso, in particular (Frederickson, 2002).

Sports science advocates warming-up before undertaking physical activity. In a study where a 'comprehensive warm-up with training elements' was prescribed, the intervention group were found to have significantly fewer serious injuries leading to a conclusion that the choice and proper execution of the warm-up exercises themselves were essential (Woods, Bishop and Jones, 2007; Brooks and Erith, 2009). In their article, 'Voice Care for Vocal Athletes in Training', Thurman and Lawrence draw close comparisons between sports athletes and singers ('vocal athletes'). They suggest that the same qualities which are required of sportsmen are required also of singers. Furthermore, they draw close comparisons between the role of sports coaches and that of choral conductors, (Thurman and Lawrence, 1980) asserting that, in sport, no practice or game would begin without a warm-up.

Research ethics

I gained consent for my research project from the Head of the school. The participants with whom I have tested my exercises sing in a 90-strong school choir of Year 7 and 8 girls (aged 11-13) which rehearses for 50 minutes, once a week, during curriculum time (it is the equivalent of a timetabled lesson). They were told, in advance, that I would be conducting some research into warm-up exercises. They were also, in line with ethical considerations, aware that their participation was both anonymous and voluntary.

My experiences as a choir director in tandem with my extensive research into vocal warm-ups placed me in a good position in which to pursue this project. As an insider-researcher I had ready access to collecting this data. My circumstances were not constrained by external factors (funding, resources and opportunities) as I was able to use the timetabled time I have allocated to this group of students (Costley, Elliott and Gibbs, 2010). By using the last minute of the choir rehearsal to collect my quantitative data (on five occasions) and the last ten minutes of the choir rehearsal to collect my

qualitative data (on one occasion), my data collection had no impact on any other aspects of the students' day, nor inconvenienced them unduly.

Research Methodology

Working within the methodological paradigm of action research, where the children help to implement practical solutions to perceived problems (Meyer, 2000), and where the cycle of planning, implementing, observing and receiving feedback, and evaluating the results is the key to success (Arikunto, Suhardjono and Supardi, 2010), served as an effective paradigm in which to affect change achieved through double loop learning (Argyris and Schön, 1978).

Once research into appropriate warm-ups for singers had been completed, a term (10 weeks) of warm-ups was delivered to my choir which consisted of warming-up the body and standing well, breathing well and with self-awareness, semi-occluded vocal tract (SOVT) exercises, and pitch and range exercises. The students completed a questionnaire which asked them to comment on the warm-ups. Negative feedback included criticism of the amount of repetition, the amount of time the warm-ups took and the lack of fun involved. I then set about redeveloping the exercises, applying my knowledge of good warm-up exercises to the problem of making them less repetitive (when repetition is an inherent part of the warm-up process), less time-consuming (when really I would be spending the same amount of time on the warm-up routine) and fun. The practical application of my knowledge, combined with what I knew from my classroom teaching to be engaging and effective approaches to working with this age-group, placed me in a good position to carry out this work.

A redeveloped warm-up exercise was introduced each week, as part of the warm-up routine, over the course of a school term. At the end of each rehearsal, the students were invited to vote on whether the redeveloped exercise was better or not better than the previous exercise style that they had experienced over the previous term.

The need to acquire both quantitative data (to establish whether each newly-devised exercise was better than that which was used before) and qualitative data (responses to my open question about the new warm-up regime as a whole) has led me, by necessity, to adopt a mixed methods approach to my research. This has enabled me to establish a more complete picture than I might have achieved by using a stand-alone method (Barbour, 2014). I adopted a pragmatic approach to mixed methods which has enabled me to acquire the most useful data from my subjects (Tashakkori and Teddlie, 2010) whilst causing the least inconvenience to them. This has had several benefits: by making the collection of the quantitative data as quick and easy as possible I have been able to persuade a large number of subjects to participate. Similarly, by only asking for a written response to my question once (providing the qualitative data), I have been able to appeal to the goodwill of the subjects and receive a full and useful answer from most of the 73 young participants.

In order to ensure validity I have not ignored or hidden results I have not liked. Rather I have revisited particular areas and developed the warm-ups further. It has been hard to

strike a balance between exercises which are necessary and exercises which are wellreceived and this has posed a problem for the creation of my child-centred resource (Denscombe, 2008). I acknowledge, too, that my insider-researcher status might have resulted in some of the participants having purposefully given responses that they think might please me, whilst others might have intentionally responded in an unhelpful way; such is the risk I take when working with this age-group (ibid.). I am pragmatic, too, in my acknowledgment that not all of the students enjoy taking part in this compulsory choir and that any warm-up, however fun and exciting, will still seem pointless and boring to this minority group.

I devised a method of collecting the students' votes which involved giving them all a counter and asking them to drop the counter into the correct box as they left the rehearsal room. In this way they voted on whether the new exercise was 'better' or 'not better' after trialling it during the rehearsal. This method enabled the data collection to be quick and easy.

This voting system has its roots in the ancient civilisations of 5th Century B.C. Athens and Rome where citizens were allowed to cast black or white stones in giving their choice (Schofield, 2004). Indeed the word ballot comes from the Italian 'ballota' which refers to the use of black or white balls in the voting process (ibid.) This method of voting with counters was pioneered in the Gambia in the 1960s using the so-called 'drum and marble' method (Omotosho, 2014). The children were familiar with this voting system, having experienced the same in supermarkets such as Waitrose whereby shoppers vote for their favourite charity, using a token, which then receives a donation from Waitrose (Community matters, 2017).

At the end of the project, I took the opportunity to access qualitative data where the respondents were able to give written feedback on my resource in action. I used surveymonkey.com to collect the students' feedback asking them to 'Please provide some feedback on the new warm-ups.' The introduction to the questionnaire included assurances of confidentiality and reminded the students that their participation was voluntary. Once I had this data, I used the open coding process as defined by Strauss and Corbin (1990) to present the raw data collected from the students' responses. I then paraphrased codes in order to reduce the number of points. This secondary coding framework identified themes which recurred between the units (Denscombe, 2008), helping to clarify 'commonalities and differences' (Miles and Huberman, 1994) found within the responses given.

Analysis of findings

Using a literature review matrix, four areas to cover in a vocal warm-up routine were identified, drawing on evidence from a wide range of books and articles on the subject (Cooper, 1998; Onwuegbuzie et al., 2010). These were 'warming-up the body and standing well' (Davids and LaTour, 2012; Williams, 2013; Lorse, 2016; Allen, 2009; Chapman, 2012), 'breathing well and with self-awareness' (Perona-Wright, 2004; Davids and LaTour, 2012; Williams, 2013), 'semi-occluded vocal tract (SOVT) exercises' (Brewer, 2002; Gaskill and Erickson, 2008; Davids and LaTour, 2012; Chapman, 2012; Williams,

2013; Saulsberry, 2015; Titze, 2005), and 'pitch and range exercises' (Titze, 2008; Davids and LaTour, 2012; Estill, 1996; Gish *et al.*, 2012).

Following further research (Arikunto, Suhardjono and Supardi, 2010), I added an exercise intended to develop self-confidence, holding a line (a choral skill) and increasing a sense of camaraderie at the end of the warm-up routine (Freer, 2009) making five exercises in total.

The first activity involved a 'warming-up the body and standing well' routine. The standard warm-up consisted of awakening activities (shaking arms and legs, rolling shoulders, nodding and shaking head) and the encouragement to stand with a hand-width of space between one's feet. This instruction, crucial if the students are to achieve a balanced posture (Allen, 2009; Mayers and Babits, 1987), tended to cause the most non-compliance. I introduced a new way of achieving this, as well as a song to help the students find a centred position (ibid). 68% of respondees thought that this was better than before, although several students remarked, in the end of process questionnaire, that they thought we were using the wrong words because I had introduced a different version of this song the previous year.



Figure I

Activity two comprised a 'breathing well and with self-awareness' exercise requiring participants to achieve a controlled, unvoiced expulsion of air using sibilants Sss, Fff and Shh, establishing an increased awareness of abdominal muscles. Rather than me predetermining how long each student would exhale for to the unvoiced sibilants, I challenged the children to count how many seconds they managed to exhale for and then to try to beat their 'personal bests' in each week's subsequent warm-up. This introduced a sense of challenge into the exercise and added to the fun whilst maintaining the physiological benefits. The theory behind this exercise is that the more efficient the exhalation is, the better the student becomes at controlling their thoracic and abdominal muscles used for so-called 'breath control' and 'support' (Hixon, 2006; Miller, 1996).





The 'semi-occluded vocal tract (SOVT) exercises' consisted of achieving sustained, pitched lip trills or rolled 'r' whilst pitch is changed. I repeated exactly the same challenge as for 'breathing well and with self-awareness' but this time used voiced lip or tongue trills. 55% of those who voted considered this to be an improvement. Evidence gleaned from the end-of-research survey threw light on why only just over half of those who voted thought the new version was an improvement, with participants both identifying a dislike these sorts of SOVT exercises and commenting on how some choir members did not take the challenge seriously. A 55% improvement is pleasing but it would be good to win over more students so I strived to continue with redevelopment of this extremely beneficial exercise.



The theory behind this exercise is that the 'pressure across the lips plus the pressure across the vocal folds must equal the lung pressure' (Titze, 1996). This means that the singer must learn, for themselves, how to increase lung pressure as the pitch ascends. 'Unless the lung pressure is raised, the lips will cease to vibrate at higher pitches because the vocal folds will automatically require more pressure' (ibid.). This excellent exercise also teaches the individual to use their abdominal muscles to support exhalation, hence why it follows on from the 'breathing well and with self-awareness' exercise.

The 'pitch and range exercises' consisted of three-note scales, ascending in pitch a semitone each time. These widely-used exercises in vocal warm-up routines, advocated by vocal pedagogics as far back as Dodds (1928) and still in print today, are an essential part of the vocal warm-up. (Chapman, 2012; Davids and LaTour, 2012; Estill, 1996; Gish *et al.*, 2012; Titze, 2008). My attempt to enliven the exercise by changing the vowel sound after three semitones rather than sticking to the same vowel sound for the whole exercise was agreed, by 57% of participants, to be better than the original. I felt that there was further improvement to be made and have since trialled having three volunteers join me in front of the choir and take turns to suggest sounds as we progressed through the exercise. This put into practice the theory that if you involve the students in the decision-making, they are more likely to respond positively (Robinson and Aronica, 2015). It was a resounding success, with plenty of enthusiasm for the exercise and a desire to do it again next week.



Figure IV

The 'confidence and camaraderie' exercises consisted of using the Pass It Back, or 'Echo Chains' game, developing aural skills using oral tradition techniques, and holding a line. One of the aims of the warm-up is to help the students feel part of the ensemble (Williams, 2013). Increasing the number of children benefitting from a sense of camaraderie during warm-ups might lead to greater levels of participation and effort being made. My research led me to an exercise explained in an article by Freer (2009) which I further adapted using the animal sounds from the traditional children's song, 'I bought me a cat'. This type of exercise (or 'game' as the students saw it) required sophisticated levels of aural ability

which develop the singing by ear technique (Priest, 1989). The students are also required to respect the sound they are making and to take responsibility for the musical quality of what they produce (Swanwick, 1999). 91% of participants thought that this exercise was better than before; the best result I achieved.



A summary of the voting is presented in Figure VI below. Overall, the students voted a 70% improvement in the redeveloped exercises which is an encouraging result. It has been challenging to balance the physiological requirements for a vocal warm-up with the need to fulfil the requirements of the students and some compromises have had to have been made in order to ensure that the warm-ups are still beneficial and effective.



Figure VI

At the end of the research period, each student was invited to provide some written feedback, answering the question, 'Please provide some feedback on the new warm-ups.' using the data-collecting platform, SurveyMonkey on school iPads. These qualitative data were collected at the end of the last two rehearsals of term with half of the students participating the first week and the other half the second. 73 students chose to participate. Using the open coding process as defined by Strauss and Corbin (1990) I began with the raw data. From this list it was possible to paraphrase codes in order to reduce the number of points. This secondary coding framework identifies themes that recur between the units (Denscombe, 2008), helping to clarify 'commonalities and differences' (Miles and Huberman, 1994) found within the answers given:

Main Code	Secondary Code
Students	We should do something different each week
appreciated the	I like how we are trying new things
variety	The warm-ups were very good as they were not repetitive
Students found	More fun and interesting
the new warm-	Now more enjoyable
ups to be fun	I really liked them as they motivate us and are fun
	Fun and exciting
Students found	My voice is clearer
the new warm-	My vocal chords feel far better afterwards
ups to be more	Easier to warm up
effective	I feel like I'm not straining my voice
	It is nice to have a game that helps you with [posture]
	Beneficial to singing
	Help me widen my vocal range
	Improve my performance
	Voice has not been sore
	Made me feel awake and ready to sing
Students liked the	Love 'pass it back'
new song-style	The new warm up song is great
warm-ups	I liked the song for standing correctly
	The different scale songs
Students enjoyed	I like the one where we see how long we hold the note for
the challenges	I like the ones where you improve it yourself because it gives
	you a challenge to do better
Students liked	All the animals helped me listen to the rest of the choir
developing skills	More people are joining in now
and camaraderie	Friendly and cool
Students	Childish
provided these	Some people do not take trying to sing the note for as long as
negative	possible seriously
responses	The posture [song] didn't really help as my friends and I didn't
	get in the right position
	I didn't like that scale with the different sounds like 'oo and ng'
	The lyrics are wrong

Table 1

Six key themes, identifying what the students valued, emerged from this data: variety, fun, effective for vocal health, newness, challenge, and skill development. Some issues divided the group, with some students specifically identifying their like of an exercise whilst others expressing a dislike for the same. This included the 'sing the note for as long as possible' challenge, the posture song and singing the scales to different vowel-sounds. Several Year 8 girls remembered the original version of the posture song which I had adapted for new purposes and bemoaned my use of 'wrong' lyrics.

I was particularly interested to read feedback from two individuals who identified some warm-ups as being 'childish'. Whiting, in his report concerning attitudes amongst music theatre professionals to warm-ups, also received observations that some of the warm-ups were 'silly' (2016). The comment, 'I think the new warm ups are generally better than the original ones but some of them are still a bit childish', suggests that the participant found the original warm-ups to be childish, despite them being 'industry standard' exercises commonly found used with adult choirs.

The perception of childishness is, perhaps, linked with the criticism that some students do not take the 'try to sing the note for as long as possible' exercise seriously. Since receiving feedback, I have adapted this exercise to try and mitigate against this. I trialled the idea of the students being asked to sit down once they had run out of breath to enable greater awareness of those who are still singing. This was much more successful in a number of ways. Firstly, there was a clear sense of respect for those who were able to sustain their breath the longest, as those who had sat down were able to observe those who were still exhaling with an increased sense of wonder. There was an immediate desire amongst the choir to try the exercise again which I preceded with an explanation about how to breathe in and then sustain the exhalation. This was well-received and resulted in many students managing to achieve their best results on the second attempt. There was also evidence of peer-monitoring going on, as students were checking on each other that they were still exhaling on their original in-take (Christodoulou, 2016).

The resource had to be easy to use with little teacher preparation time required. I have created at-a-glance cards, where the explanation is kept short and the words the teacher should read out are printed, in bold, in one column. Consistency is maintained throughout the five cards. The instructions are intended to be clear and both easy to follow, and easy to explain to the students. The teacher needs to use few words to allow maximum time for singing. Titze (1996) explains the 'hierarchy of voice production: respiration first, phonation second, articulation third.' I have adopted this in the order in which I have devised the warm-up cards to be delivered. Also included are the piano parts, if there is a pianist available, and full book and journal references for teachers who wish to undertake additional reading.

Discussion

The research I have completed for this resource has enabled me to create better agespecific warm-ups for my choir and to pave the way for me to share this with other choir directors. The students have become more engaged with the vocal warm-up process and have demonstrated that they have derived better benefit from it. The thoughtful responses I received as part of my qualitative research have proved this.

By furthering my awareness of the pantheon of warm-up exercises published and endorsed by others I have, in consultation with my students, devised an age-appropriate set of warm-up exercises. Furthermore, I have seen for myself the academic justification for various exercises, borne out by scientific, measurable research, and have seen the results of this work manifest in the students I teach.

I have designed a resource for choir directors to use when completing a warm-up routine with their students, trialled each individual exercise with students, and have received feedback on my work from those for whom the resource is designed to help. I have responded to this by further adapting the exercises, taking account of criticisms rendered, in order to produce the best work possible.

My research has shown me that vocal warm-ups are about *deliberate practice* and that, although they do not resemble, very much, the singing the students do when they are rehearsing repertoire, they make a considerable contribution to the improvement of the quality of each, individual voice and, therefore, the sound of the choir as a whole (Christodoulou, 2016). In showing the students that I have a growth mindset (Dweck, 2006) and that I willingly listen to their feedback in order to adapt the warm-up routine accordingly, I have been able to encourage them to approach choir in the same way. I have worked alongside the students enabling them to take a greater responsibility for their progress and therefore become even more engaged in both choir rehearsals and their own vocal development (Robinson and Aronica, 2015).

Now I have such an engaged and motivated group of students, new possibilities of what the choir can achieve are beginning to emerge. The students now demonstrate a considerable commitment to choir rehearsals which is resulting in repertoire-learning becoming a faster process. This has meant that I can be more ambitious both with my choice of repertoire and with the amount of music we can cover each week.

Choir directors who have subsequently made use of this resource have also provided feedback, a report of which will appear in a future paper.

The warm-up cards can be viewed here:

https://www.tes.com/teaching-resources/shop/sparkhallo

References

- Allen, M. 2009. "The Core of the Body and the Six Places of Balance." In *What Every Singer Needs To Know About The Body* by Malde, M., Allen, M., and Zeller, K., 45-70. San Diego, CA: Plural Pub.
- Amir, O., Amir, N., and Michaeli, O. 2005. "Evaluating the Influence of Warmup on Singing Voice Quality Using Acoustic Measures." *Journal of Voice* 19 (2): 252-260.

- Argyris, C., and Schön, D. 1978. *Organizational learning: A theory of action perspective*. Reading, Mass: Addison Wesley.
- Arikunto, S., Suhardjono and Supardi. 2010. *Classroom action research*. Jakarta: Bumi Aksara.
- Barbour, R. 2014. *Introducing Qualitative Research A Student Guide*, Second Edition, Thousand Oaks, CA: Sage.
- Brewer, M. 2002. *Mike Brewer's Warm-Ups*. London: Faber Music.
- Brooks, J., and Erith, S. 2009. "Warm-up Programmes in Sport." *British Medical Journal* 338 (7686): 61-62.
- Callaghan, J. 2014. *Singing & Science*. Compton Publishing.
- Chapman, J. 2012. *Singing And Teaching Singing: A Holistic Approach To Classical Voice,* Second Edition. Plural Publishing.
- Christodoulou, D. 2016. Making good progress? OUP.
- Community Matters. 2017. "Community matters: We support good causes, you decide who gets what." Retrieved from http://www.waitrose.com/content/waitrose/en/home/inspiration/community _matters.html. Accessed March 2017.
- Cooper, H. 1988. Organizing knowledge synthesis: A taxonomy of literature reviews. *Knowledge in Society*, 1: 104-126.
- Costley, C., Elliott, G., and Gibbs, P. 2010. Doing Work Based Research: Approaches to Enquiry for Insider-Researchers. London, Sage.
- Davids, J., and LaTour, S. 2012. *Vocal Technique*. Waveland Press, Inc.
- Denscombe, M. 2008. *The Good Research Guide for small-scale social research projects.* 2nd Edition. OUP.
- Dodds, G. 1928. Voice placing and training exercises. OUP.
- Dweck, C. 2006. Mindset: The New Psychology of Success. Random House.
- Estill, J. 1996. Workshop: Compulsory Figures for the Voice, 28 January to 2 February. Sydney Australia: National Voice Centre.
- Frederickson, K. 2002. "Fit to Play: Musicians' Health Tips." *Music Educators Journal* 88 (6): 38-44.
- Freer, P. 2009. "Choral Warm-Ups for Changing Adolescent Voices." *Music Educators Journal* 95 (3): 57-62.

- Gaskill, C., and Erickson, M. 2008. "Effect of a Voiced Lip Trill on Estimated Glottal Closed Quotient." *Journal of Voice* 22 (6): 634-43.
- Gish, A., Kunduk, M., Sims, L., and McWhorter, A. 2012. "Vocal Warm-Up Practices and Perceptions in Vocalists: A Pilot Survey." *Journal of Voice* 26 (1): 1-10.
- Heizmann, K. 2004. Vocal Warm-ups: 200 Exercises for Choral and Solo Singers. Schott Music.
- Hixon, T. 2006. *Respiratory function in singing; a primer for Singers and Singing Teachers*. Redington Brown: Arizona.
- Knight, P. 2015. Sing! Vocal Warm-Ups for All Styles with Download Card. Music Sales Ltd.
- Litten, N. 2015. Choral and Vocal Warm-Ups for Pianists. Alfred Music Publishing Co. Ltd.
- Lockwood, A. 1989. "Medical Problems of Musicians." *New England Journal of Medicine* 320: 221-27.
- Lorse, B. 2016. Warm-ups before singing: The Handbook. Fidelio Publishing.
- Mayers, H., and Babits, L. 1987. "A Balanced Approach: The Alexander Technique." *Music Educators Journal* 74 (3): 51-54.

Meyer, J. 2000. "Using qualitative methods in health related action research." *British Medical Journal*, 320: 178–181.

- Miller, R. 1990. "Sotto voce: warming up the voice." The NATS Journal 46 (5): 22-23.
- Miller, R. 1996. *The structure of singing: System and art in vocal technique.* Schirmer Wadsworth Group, CA.
- Miles, M., and Huberman, A. 1994. *Qualitative Data Analysis*. 1st ed. Thousand Oaks: Sage Publications.
- Moorcroft, L., and Kenny, D. 2013. "Singer and Listener Perception of Vocal Warm-Up." Journal of Voice 27 (2): 258.e1–258.e13.
- Omotosho, O. 2014. The Electoral Process in the Gambia: A Giant Stride in the Makings of a Viable and Stable Political System. Department of Political Science, University of the Gambia Brikama, The Gambia.
- Onwuegbuzie, A., Collins, K., Leech, N., Dellinger, A., and Jiao, Q. 2010. A meta-framework for conducting mixed research syntheses for stress and coping researchers and beyond. In G. Gates, W. Gmelch, and M. Wolverton (Series Editors) and K. Collins, A. Onwuegbuzie, and Q. Jiao (Volume Editors), *Toward a broader understanding of stress and coping: Mixed methods approaches.* 169-211. The Research on Stress and Coping in Education Series (Volume 5). Charlotte: Information Age.

Onwuegbuzie, A., Leech, N., and Collins, K. 2012. "Qualitative Analysis Techniques for the Review of the Literature." *The Qualitative Report* 17 (28): 1-28.

Perona-Wright, L. 2004. *Voice For Life*. Surrey, England: Royal School of Church Music.

- Platt, J. 1981. "Evidence and proof in documentary research." *The Sociological Review* 21 (1): 31–66.
- Priest, P. 1989. "Playing by ear: Its nature and application to instrumental learning." *British Journal of Music Education* 6 (2): 173-91.
- Robinson, K., and Aronica, L. 2015. *Creative Schools*. Penguin Group, USA.
- Ryan, T. 2005. *When you reflect are you also being reflexive?* Faculty of Education, Nipissing University. Retrieved at http://oar.nipissingu.ca/PDFS/V812E.pdf.
- Saulsberry, R. 2015. *Rodney Saulsberry's Tongue Twisters And Vocal Warm-Ups*. Bookbaby.
- Schofield, D., and DeSimone, R., editor, 2004. Voting and the Spirit of Democracy. *Technical Services Department Faculty Publications*. Paper 12. http://digitalcommons.uri.edu/lib_ts_pubs/12.
- Scott, J. 1990. A Matter of Record. Cambridge: Polity Press.
- Strauss, A., and Corbin, J. 1990. *Basics of Qualitative Research: Grounded Theory Procedures and Techniques.* London: Sage.

Swanwick, K. 1999. *Teaching Music Musically*. Routledge, London.

Tashakkori, A., and Teddlie, C. 2010. "Putting the human back in 'Human Research methodology': The researcher in mixed methods research." *Journal of Mixed Methods Research* 4 (4): 271-277.

Titze, I. 1993. "Voice research: warm-up exercises." *The NATS Journal* 49 (5).

Titze, I. 1996. "Lip and Tongue Trills - What do they do for us?" *Journal of Singing* 52 (3): 51-2.

- Titze, I. 2005. "Voice Training and Therapy With a Semi-Occluded Vocal Tract: Rationale and Scientific Underpinnings." *Journal of Speech, Language, and Hearing Research* 49: 448-459.
- Titze, I. 2008. "Getting the most from the vocal instrument in a choral setting." *The Choral Journal* 49 (5): 34-41.
- Thurman, L., and Lawrence, V. 1980. "Voice Care for Vocal Athletes in Training." *The Choral Journal* 20 (9): 34-37, 56.

Whiting, T. 2016. Exploring Attitudes to Vocal Warm Up. *Unpublished*.

Williams, J. 2013. *Teaching Singing To Children And Young Adults*. Oxford: Compton Pub.

Woods, K., Bishop, P., and Jones, E. 2007. "Warm-Up and Stretching in the Prevention of Muscular Injury." *Sports Medicine* 37 (12): 1089-1099.