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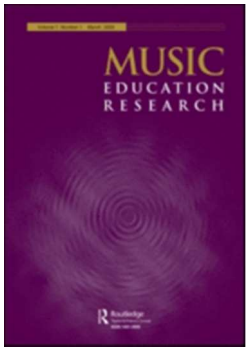

Adolescent perceptions of singing: exploring gendered differences in musical confidence, identity and ambition

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Abstract

Previous research on adolescents and singing has focused on understanding the physiological changes in the voice during the age range 11-16 (Cooksey and Welch, 2008), and addressing the lack of male participation in singing (Ashley, 2013; Hall, 2005). This study makes a new contribution by exploring adolescent girls' perceptions of singing as compared with those of boys. Through an inductive, two-phase research design, the language of the students themselves is used to describe their perceptions of singing. The roles of motivation, confidence, self-efficacy and autonomy come through as strong influences on the students' enjoyment of singing. Boys have a tendency to exhibit static ability evaluations in this age group, and demonstrate a lack of cognitive understanding of their changing voices. Girls, however, recognise that effort, ability and confidence interact in different ways depending on the social context for their singing. Recommendations for teachers are made, that could challenge ~~some of the~~ boys' fixed views of their vocal abilities, and strengthen the appeal of group singing for all adolescents.

Keywords: adolescent; singing; motivation; changing voice; self-efficacy

Research context

Adolescent reluctance to sing is a familiar challenge for music educators and has attracted increasing research attention in recent years, with studies focusing on the physiological changes in the voice during the age range 11-16 (Cooksey and Welch, 2008; Gackle, 1991), and the effects of gender stereotyping and curriculum design on an apparent lack of male participation in singing (Ashley, 2013; Hall, 2005). Enjoyment of singing in both sexes has

been shown to decrease before and during adolescence (Welch et al. 2009; Lamont, Hargreaves, Marshall and Tarrant, 2003), and with an emphasis in the research literature on boys' perceptions of singing, this study aims to explore girls' attitudes and experiences and to compare the strategies used (or avoided) by pupils of both sexes to adjust to their changing adolescent voices.

The need to support singing in schools comes not just from its inclusion in the UK National Curriculum and its international equivalents (DfE, 2013), but also from the benefits attributed to singing throughout the lifespan, which include both physical factors of positive affect and benefits for immune function (Kreutz, Bongard, Rohrmann, Hodapp, Grebe, 2003; Beck, Cesario, Yousefi, Enamoto, 2000) and psychological factors of social bonding, self-expression and identity development (Pearce, Launay, van Duijn, Rotkirch, David-Barrett, Dunbar, 2016). Singing in a choir helps to enhance positive emotions and reduce~~s~~ stress levels (Judd and Pooley, 2013), partly through the physical release of endorphins and decrease in cortisol, which reduces stress (Beck et al. 2000), but also through the effects of group participation and expression of emotions which can contribute to feelings of wellbeing and belonging (Mellor, 2013). Durrant's (2005) work on the role of choral singing in the development of social identity noted that the social function of the experience was of equal importance to the musical function, and highlighted the pivotal role of the choral director in developing expression, motivating the group and attending to its cohesion and development. Judd and Pooley (2013) note that school experience heavily influences an interest in choral singing later in life and there is ~~much~~ evidence to suggest that the adolescent age group (11-14 years) is a critical period where engagement with singing and music in general can be a contentious issue (Legg, 2013; Lamont et al. 2003). This is further reinforced by Powell (2017) in her work on male singers' possible selves. The choral experiences provided in school are shown through several of these studies to be important in helping young singers to develop strong future choral identities.

While the collective understanding of the value of singing continues to grow, much of the existing research has focused on teachers' perceptions of adolescent singers (Finney, 2000), or on adults reflecting back upon their experiences (Harrison, 2007; Turton and

Durrant, 2002). Difficulties of motivating adolescent singers in the face of inappropriate primary school experiences, peer pressure and embarrassment were reported in Finney's (2000) study ~~with~~ of 40 secondary school music teachers, ~~leaving them~~who were left with a feeling of uncertainty with regards to motivating their students. This uncertainty could in turn reduce teachers' effectiveness in supporting students to develop the cognitive strategies that lead to self-reflection and self-goal setting (Austin, Renwick and McPherson, 2006); indeed, the teaching of metacognition requires a clear understanding of the processes at work in learning a skill, a facet that is often missing in the teaching of singing (Cooksey and Welch, 2008). Little wonder then that the adults involved in retrospective studies of school experiences of singing (Turton and Durrant, 2002) recall uninspiring or off-putting singing lessons, with female respondents typically concerned that the style of the music sung at school did not represent their preferences, and males much more concerned with their own inadequacies as singers.

In studies w~~W~~here adolescents themselves have been active research participants, they have tended to be existing singers who choose take part in singing classes or choirs (Lucas, 2011; Monks, 2003). Some research with younger pupils took place around the introduction of Sing Up, the national primary school singing initiative that began in England in 2007 (www.singup.org), aiming to establish a baseline of singing competence and confidence from which the success of the programme could be measured (Welch et al., 2009). The older children were significantly more able singers than their younger counterparts, ~~both~~ in terms of comfortable ~~singing~~ pitch range and in their singing competency; across all age groups there were significant gender differences, with girls scoring more highly for competency, which was in line with previous research (Welch, 2006). Longitudinal studies with the Sing Up programme demonstrated improvements in singing skills, teacher confidence and, interestingly for this research, young people's 'ability to see their weak and strong points as singers' (CUREE, 2012: 9).

Reluctance to sing needs to be understood in the broader context of the importance of music to adolescents, with active listening to music ranking above other leisure pursuits (Fitzgerald, Hayes and O'Regan, 1995), and contributing strongly to emerging personal and

social identity (North and Hargreaves, 1999). The majority of adolescents' musical engagement therefore involves elements of choice and self-direction (Green, 2008; 2002), and as such will form a stark contrast with the loss of vocal control in adolescence, which may be little understood by the pupils and indeed their teachers (Cooksey and Welch, 2008). Attempts to increase this understanding, through the use of peer modelling by older singers (Hall, 2005) or the formation of 'cambiata' choirs to accommodate boys' changing voices (Cooper, 1964; Ashley, 2013), have evidenced some success. Similarly accounts of schools with a strong tradition of singing have shown that positive experiences can be sustained through adolescence, but these have tended to be independent cathedral schools (Ashley, 2013) or private boys' schools (Bennetts, 2013). The need to transfer approaches from these elite educational environments to the mainstream remains under-explored, and Monks' (2003) makes the critical assertion, drawn from her longitudinal study with adolescent singers, that teachers must help adolescents through the changing voice stage by encouraging and helping them understand that it is not a permanent state.

The~~With the~~ voices of adolescents, and in particular girls, are under-represented in the research literature, and this study aims to redress that balance~~, and~~ to increase awareness of the complexities of personal development, musical preference and social identity that contribute to young people's experiences of singing. Investigations with the adolescent population of a British international school in Bangkok, Thailand will focus on their emergent identities as singers (or non-singers), drawing on theories of confidence, self-efficacy, motivation and 'possible-selves', each of which have been shown to have an effect on singers (Bandura, 1977; Freer, 2010; Bonshor, 2014).

Aims, methods and participants

The aims of this research project were to investigate the perceptions of Key Stage 3 (ages 11-14) students towards singing in the context of other musical activities and gender. The following research questions defined the parameters of the research:

1. How does singing rate in the opinion of KS3 students compared with other musical activities?
2. What factors affect adolescents' attitudes towards singing – and do these factors demonstrate a gender dimension?

The study design incorporated a questionnaire, intended to gather an overview of student opinions on music in and out of school: students were asked to rate their enjoyment of a range of musical activities, using an ordinal scale from 1-6 (with 1 indicating a low level of enjoyment) intended to encourage the students to consider their responses rather than opting for a neutral response each time. A second section with an open question asked them to explain their reasons for enjoying or not enjoying a selection of four musical activities: playing an instrument, singing, listening to music at home and composing – selected to give a broad picture of the young people's musical activities and so to contextualise their statements on singing. The open questions resulted in comments in the students' own words, which were subsequently coded for content. In the coding, the language the students used to express themselves was retained where possible, though some extrapolation of meaning was necessary in order to categorise in a meaningful way.

The questionnaire participants (see Table 1) were all Key Stage 3 students at a private British international school located in Bangkok, Thailand, where ~~Author 1~~the first author is a music teacher. The cohort is representative of the multi-cultural nature of the school where the curriculum is delivered in English and many of the students are bilingual with some English as an Additional Language (EAL). All students have two class music lessons per week, of which singing is a compulsory part, so all responses are from 11-14 year olds who have experienced some level of singing. Participation in the research was voluntary and consent was sought from both students and parents, in accordance with the ethical approval granted by the University of Anon. As part of the introduction to the questionnaire, it was made clear to the students that this activity was not part of school work, that the researcher's role was not that of a teacher in this instance and that all responses would be anonymous. All students, except one, subsequently took part in the questionnaire.

INSERT: Table 1 – Key Stage 3 Participants

The questionnaire data served to identify students for the second phase of the research, during which a series of semi-structured group interviews were conducted. These interviews explored the meaning and importance of singing in the adolescents' lives, and were intended to illuminate any particular attitudes towards singing in and out of school. Group rather than individual interviews were chosen in order to encourage peer-to-peer discussion. Students were interviewed with others who had indicated a similar level of preference for singing in their questionnaires (enjoyment ratings of 1 or 6, classified as 'non-keen' and 'keen' singers), with the hope that this would discourage social consensus and invite more open responses. This selection process resulted in four interviews per year group: male keen singers, female keen singers, male non-keen singers, female non-keen singers. Questions were open and flexible enough to allow further probing and elucidate the meaning of responses (Judd and Pooley, 2013): they included topics of current and past singing preferences and behaviours, attitudes of friends to singing, likelihood of joining a choir, and opinions on the place of singing in the curriculum.

Interviews were transcribed in full and analysed thematically, enabling comparison with the questionnaire data and paying particular attention to gender differences. The following section presents the questionnaire findings first, in order to provide the wider context for the group discussions, in which the pupils' experiences and ambitions as singers were explored in greater depth. Individual participant codes (a, b, c) are used to refer to the anonymous responses, along with a group code indicating the age, gender and rating for singing (e.g. the group M8.1 are the Year 8 males who indicated a low rating for singing enjoyment in the questionnaire; F9.6 are the Year 9 females with the highest singing enjoyment rating).

Analysis and Discussion

Phase 1 – Questionnaire

The student questionnaire asked pupils to express their enjoyment of different musical activities on an ordinal scale marked 1-6, with 1 representing the least enjoyment and 6 as the highest level of enjoyment. Table 2.1 displays the mean ratings for the school musical activities, in which two activities showed a marked difference by gender: singing and music technology. These were equally popular among the total sample (3.8), though girls showed a marked preference for singing (4.4) and boys demonstrated a preference for music technology (4.2). In music technology, a particularly high rating for Year 7 boys (4.8) coupled with a particularly low rating for Year 8 girls (2.8), affected the overall mean rating for each gender, while in relation to singing there was greater consistency across age groups.

INSERT: Table 2.1 – Mean Ratings for School Based Musical Activities

When compared with the other musical activities singing appears to rate quite highly, with the highest mean rating for girls overall appearing in this activity. The gender difference is marked and this is most obvious at Year 7. This trend exists throughout KS3, however by Year 9, enjoyment of singing in girls is less, with over 40% of Year 9 girls indicating a rating of 4. In each year group, the boys' responses show a peak rating of 3 or 4, indicating an indifferent attitude towards singing, tending towards a more positive rating in Years 7 and 8. By Year 9, the boys are clearly oriented towards the lower ratings.

INSERT: Table 2.2 – Mean Ratings for Musical Activities Outside of School Curriculum

Table 2.2 displays the mean ratings for activities the students took part in outside school. In the design of the questionnaire, the extent of singing outside school was underestimated: the 27 responses noting 'additional activities' included 11 references to singing, suggesting that this may be a significant informal musical pastime outside school. Therefore, it would be useful in future studies to investigate the perceptions KS3 students have towards singing under various circumstances and to compare singing in and out of school.

The open-ended responses in which the students commented on their enjoyment or otherwise of four musical activities – playing an instrument, singing, listening to music at

home and composing – provided qualitative insight on the ratings obtained above. Three main themes were evident following coding of these responses: intrinsic benefits, indications of self-efficacy and issues of autonomy.

(i) Intrinsic benefits

The students reported receptive benefits from their musical activities, including relaxation (40%) and the invocation of a positive feeling (27%) such as happiness, peacefulness or a sense of fun (45%). Listening to music at home provided the students with the strongest benefits, however they also identified the benefits of singing as a factor contributing to enjoyment. This was particularly true of the sense of fun gained through participation in singing. T~~:~~ ~~t~~his finding was consistent with responses to given statements in Lucas's (2011) study with adolescent male choir members, but demonstrates that 'fun' is a word that adolescents themselves use to describe singing, and therefore bring to their expectations of singing in school. Both boys and girls also showed recognition of the psychological benefits of singing for expressing emotions, achieving relaxation and feeling positive.

For each of the four musical activities, girls refer more readily to intrinsic benefits than boys. This could be explained in part by boys' tendency to avoid 'emotional self-disclosure' when adults are asking the questions (O'Kearney and Dadds, 2004), although the anonymity of the questionnaire should have alleviated this to some extent.

(ii) Indications of self-efficacy

The adolescents in this study made a link between their enjoyment of an activity and their perceptions of their own abilities, demonstrating both self-evaluation and task oriented motivations. For singing, the self-evaluation factors were particularly strong, most often in a negative sense for boys, with 73% of the responses "I'm not good at it" (n = 33) being from boys. While 24% of the boys reflected on their ability to sing, as compared with 10% of girls, the girls showed more inclination to describe a lack of confidence. This finding raised questions of self-efficacy (O'Neill and Sloboda, 1997), consistent with the cyclical pattern identified in previous music-related studies, whereby low self-efficacy leads to poor effort and persistence towards achievement goals, and ultimately results in poorer self-efficacy (Creech and Hallam, 2003).~~:~~ B~~b~~oys' perceptions of their ability to sing and

girls' expressions of lack of confidence were therefore highlighted for further exploration in the group interviews (see Phase 2 analysis below).

The comments pertaining to ~~task oriented~~task-oriented motivations gave a clearer view of how the students approach their learning. The use of the word 'challenging' by 30 of the students suggests a more malleable approach where challenge is embraced and recognised as a positive force for improvement. It was clear from the context of the statements, that students were intrinsically motivated by challenge and enjoyed it. Conversely, the students who were less motivated by musical challenge would describe activities as "too difficult": this can either be seen as a reflection on the learning goals set in the teaching, or as evidence of a 'helpless' view of ability (O'Neill and Sloboda, 1997), voiced as a displacement from their own inability towards the difficulty of the task. Addressing notions of challenge and difficulty more explicitly in the classroom could be an area for development, with potential to contribute to boys developing a more practical understanding of how to progress in singing.

(iii) Autonomy

The KS3 students showed that they valued the opportunity to choose their own music for listening, performing (instrumental and singing) and for composing. This supports the work by Ryan and Deci (2000) on self-determination theory, which identifies competence and autonomy as inherent psychological needs that are required for intrinsic motivation. The students were not directly asked about opportunities for musical choice, but 27% of them mentioned autonomy and choice as contributing to enjoyment, so demonstrating that these are considerable factors in their relationship with music.

A fifth of the students (19%) commented that they 'Enjoy singing with friends or alone (rather than at school)' implying an element of self-determination. Such informal situations give students choices over whether they want to sing or not, where they do it, with whom, what they sing and for how long. Several students also mentioned that they felt more comfortable with people they knew well and who would not judge them as opposed to in front of their peers in a school lesson.

Phase 2 – Group interviews

The in-depth discussions with the interview groups allowed for greater exploration of the themes identified above, as the students reflected on their experiences alongside group members of the same age, gender and singing preference. After transcription of the interviews, eleven themes were identified in the responses, and then grouped into three superordinate themes as shown below (Braun and Clarke, 2006). These themes are closely related to the questionnaire data, but give a greater insight into contributing and interrelated factors.

(i) Personal – expression, effort and self-efficacy

Music as means of ~~expressing emotions~~expression emerged in questionnaire findings, and the interviews gave more insight into how the students use singing as a tool for expressing themselves:

> If something bad happens at home, I just put my headphones on and start singing along to it. And if I'm upset, I choose songs that make me feel I'm not the only one who's feeling this, and that I'm not alone. So it usually works. (F8.6a)

This girl's response indicates the uninhibited use of singing for emotional release, but boys appeared less comfortable with their voices, with one stating that "nowadays I'm more shy about my singing" (M8.6a). They also reported difficulties in "fitting" to the songs they heard:

> I already have a deep voice. And for most of the songs you have to use a high voice and when I try that, it's just too high. It goes through the ceiling. (M8.1b)

While boys with already changed voices struggled with this fit to repertoire, some younger male pupils felt their voices to be "too high" (Y7.1b), rejecting this vocal identity as making them sound "a bit young", though there was some anxiety evident in the statement, "I'm just used to this voice" (Y7.1b). Older boys expressed uncertainty about how their changed

voices sounded and this was a further inhibitor to singing, particularly "in front of a crowd" (M8.6b):

> This sound that I hear and the sound that everyone else hears is different. I don't know what my voice is like now. (M8.1b)

Other boys seemed less troubled by the unfamiliar sounds of their voices, and reported that the change did not affect their likelihood of singing:

> It still cracks sometimes, when I try to sing like high notes, it makes like a weird….. so, like it'll go high and then low, but very quickly. I'm not sure how to explain. It feels like my here (*gestures to throat*) is kind of vibrating. (M7.1c)

Girls' voices also change in adolescence, with implications for identity and confidence (Monks, 2003), but in these group interviews the girls seemed less aware of the specific qualities of their voices, often describing them in very neutral terms as "fine" or "boring". The more detailed descriptions tended to be positive, in contrast to the boys' negativity:

> Mine has changed a lot. There's more power in it. It's not like plain, I do more variations in it and my voice sounds…completely different. It sounds more like a singer than just a girl singing. (F7.6a)

Another striking difference was that the girls reported actively exploring and developing their changing voices, rather than identifying their limitations, as the boys had. Several girls described watching YouTube videos on how to perform specific songs, using Apps on their iPads to record and assess their own singing, and practising or performing with members of their families whenever they had the opportunity:

> Actually, at home sometimes I record my voice. Turn all the aircon off, to actually see, and then I try to just improve it. I do that on different days. So I see like with the same song and I see why. I actually write down if I was super angry or super happy and I compare my voice and try to make it better. (F8.6b)

The changes that these girls witnessed in their voices were part of an active desire to achieve performance goals and improve their voices. The boys had more of a sense of something happening *to* them and in most cases responded passively to those changes.

Singing in front of others had variable effects on vocal confidence, with one girl describing how she had "many types of singing voice" (F9.6b) and would not use her "real" one in school, choosing only to "go more full out when I'm alone". However, while performance nerves would make the voice "start getting shaky and stuff" (F8.6a) in some cases, others were motivated by a performance situation to "try more", and so "to sound more smooth and just better when I'm singing in front of someone" (F9.6c). These responses all suggest some level of vocal control in social singing, whether holding back to avoid taking risks, or singing out and trying harder. Generally, the girls appeared to be evaluating their own singing ability, however accurately, while the boys relinquished those judgements to others with the subsequent anxiety that "I don't know what people think" (M8.6b).

(ii) Social – social benefits and challenges, influence of others, confidence

Despite some uncertainties about singing in public, the students commonly identified the mutual benefits of singing in social settings, echoing Mellor's (2013) study of choral singing and well-being by reporting the pleasure of being with friends as a factor that contributed considerably to the enjoyment of singing in school.

> I'm not sure….it's just a certain something that makes it fun! Maybe just being with friends I guess. (F7.6a)

The social experience of singing was the main motivating factor for some students, either to avoid being left out of a group, or for the vocal security of singing together: "when we're with friends and we're having fun we might sing, but if I'm alone, I don't really" (M7.1a). Friends' decisions over joining a choir could also have an effect on motivation to sing, and the pleasures of singing in harmony were described by one Year 7 choir member: "it makes

me feel like instead of just being a small part, it feels like I'm doing a little more for the team" (M7.6a). Singing in a group could, however, bring its own musical challenges:

> I think, not mentioning names, but when we sing as a group, some people overtake voices. […] Yeah, some people just mouth it and some people overtake so you can't even listen to your own voice just to check. And it's actually kind of annoying, we should be singing at the same level. (F8.6b)

Amongst respondents who were not current choir members, there was little evidence of the peer pressure against singing reported in other studies (Harrison, 2007), though this could have been due in part to the teacher-researcher eliciting an expected desired response. Instead, joining a choir was seen as a "brave" or "confident" choice, allowing people to "show something that they're good at" (M9.6b) and demonstrate that "they're not scared" (F7.1c) to sing "in front of a lot of people" (F7.1b). Nonetheless, an absence of boys in the choir was noted in several group discussions, and explained with reference to boys being "more sporty" (M8.1a): indeed the scheduling of sports teams and choir rehearsals against each other has been noted as a 'cost factor' in other studies (Wigfield and Eccles, 2000) and was referred to by both sexes, in six of the interviews, as a reason for not taking part in choir.

(iii) Musical – musical influences and choice

Adolescent musical preferences are often strongly held and socially significant (North and Hargreaves, 1999), and in general, the students in this study felt that the musical choices made for them by music teachers were not representative of their own tastes: "sometimes the songs are different to what I listen to, what I enjoy" (M8.1a). Contrasting their own preferences for "modern pop songs" with the "old kind of songs" (F8.1a) sung in class, the students attributed "boredom" and lack of enjoyment with singing songs that "not a lot of people know" (F8.6a). The main suggestion for improving singing in school was therefore to find out "what kind of singing music they like" (M8.6a), but while the Year 9s acknowledged the partial success of having recently voted on the choice of song for a

singing project, they still felt that the song choices were not sufficiently up to date: "The three choices you gave us were all 2010, all old" (M9.1b).

Male students across the year groups noted potential difficulties in selecting songs according to student preference:

> It's weird because it depends on the person and what you like. So one person can't say "it's better we sing this", 'cos different people have different opinions. (M7.1a)

> Like when we were young, we only had a couple of songs that we could all remember, but right now we all like different pop songs and we like different genres of music, so we like don't really get along with each other. (M9.1b)

Some recognition was made of the importance of being introduced to different kinds of music in school, with exposure to unfamiliar repertoire leading to new preferences and discoveries:

> [In school] it's like usually, a type that I would never sing, but then I sing that and I kind of like it and I would go home and listen to it and sing. Can I give examples? For example in History class there's a song Glory by John Lennon. So first when you listen to it, I just hated it, it was not my type, but then you listen to it again and again, and then go home and I tried singing it. I actually like it, so now I'm obsessed with it! (F8.6b)

Avoiding songs that were "babyish" (F9.6a) was also a clear priority for the students, though their definitions of these were sometimes unexpected, with some simple folk songs being described as "fun" by a girl who had enjoyed singing them at a choral day at another school. These reflections on the musical contributors to enjoyment of singing all suggest that a balance has to be sought between giving the students some degree of group-determination and some recognition of the music they are interested in as well as exposing them to new material.

Conclusions and implications

A pervading feature of this study was the extent to which singing was part of these adolescents' lives. Despite the absence of this age group from school choirs, they still choose to sing and do so regularly. Accounts were given of going to karaoke booths with friends, improvising songs about their everyday life, singing in shows in shopping malls, singing as part of cultural celebrations and, of course, singing in the shower. The KS3 students who took part in this research recognised that singing holds psychological benefits and attributed these to their general level of enjoyment when singing. Further to Mellor's (2013) work on singing and well-being where the participants were all members of singing groups, our research suggests that a more general population of adolescents find similar benefits, even when they are not actively seeking them in an organised activity. Further study into the nature and extent of singing arising through student choice in informal settings could yield much useful insight into the motivations and psychological effect of singing in adolescence.

Both sexes identified difficulties with singing, which affected their overall enjoyment of the activity, but boys were more negatively impacted by these difficulties than girls and reported lower enjoyment ratings. As with Turton and Durrant's (2002) study of adults reflecting on their adolescent experiences of singing and Freer's work (2010) on possible selves, the adolescent boys in this study were most concerned with their own inadequacies in relation to skill. Those who described vocal inability seemed unable to see a path that would lead them to improvement and none identified effort as being a factor that would lead to skill development. Like the boys in Freer's (2016) study, adolescent vocal change was viewed by male respondents as 'something to endure, ignore or bemoan' (p. 85). Girls, however, were more affected by psychosocial factors such as perceived judgements by others: some girls demonstrated lower self-efficacy for singing in social situations and attributed this to both effort and performance anxiety. This differs from Turton and Durrant's (2002) work as they found that girls were most preoccupied with the choice of music. In the current study, boys and girls showed equal concern for musical choice, both

as a limiting factor preventing enjoyment in relation to singing in school and also as their solution for making singing in school more enjoyable.

Implications for teachers

The social setting of singing together was identified by both sexes in this study as an important factor in enjoyment. It was described as *the* motivating factor in getting involved and it was also noted that the product of a group singing together could be very 'beautiful'. This suggests that by emphasising the positive social benefits, such as social cohesion, inclusivity and bonding as part of a team, some of the social worries displayed by girls could be allayed. Singers can feel more secure if they have their fixed spatial positions where they feel supported within their vocal grouping (Bonshor, 2014). A sense of teamwork can be achieved through positive reinforcement of the factors that contribute to overall outcome, such as shared responsibility (Parker, 2014). Additionally, by heightening awareness of the musical outcome and praising performance success, individual and group efficacy can be improved (Wigfield and Eccles, 2000). By taking a positive psychology approach and working on social identity development, students could be helped to identify the benefits of group singing more readily than the disadvantages.

The fixed view of singing ability expressed by the boys in this study needs to be challenged. This could be achieved by developing metacognition, providing appropriate repertoire and guiding boys in identifying development targets (Freer, 2010; Cooksey and Welch, 2008; Finney, 2000). The benefits of single sex singing have been discussed in previous research (Ashley, 2013; Demorest, 2000): however, the current study shows an additional benefit of single sex singing for boys in providing safe opportunities for them to learn "what my voice is like now" (M8.1). Helping boys to understand and accept their new voices was a clear priority arising from the data, with some evidence that this approach would also benefit girls, some of whom could not explain why they did not like their voices and may not have understood that they too are undergoing change as part of adolescence.

A challenge for music education

The importance of group singing for adolescents is intrinsically linked with the benefits that can be derived from the activity. These benefits occur on personal, social and musical levels and are so numerous that every adolescent should have the opportunity to profit from them. The barriers to adolescent singing are just as numerous and it takes a thorough understanding of these to address them. Music education is ultimately responsible for breaking through these barriers. This can only be achieved through developing a curriculum that takes account of relevant research and supports teachers in selecting appropriate repertoire. Training in choral leadership also needs to be made available for all teachers, not only those with the motivation to look for it. This training needs to incorporate understanding of the anatomical changes girls and boys are undergoing and the implications of these, and also make teachers aware of the perceptions adolescents have towards singing. Through this, programmes of study may be developed that incorporate the metacognitive elements of understanding physiological changes in the voice, exploit the positive social benefits of group singing and offer a balance of student- and teacher-selected repertoire that excites, challenges and motivates adolescent singers.

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Table 1 – Key Stage 3 Participants

Year Group	**Total *n***	**Female *n***	**Male *n***
Year 7 (ages 11-12)	69	27	42
Year 8 (ages 12-13)	66	33	33
Year 9 (ages 13-14)	57	32	25
Total	192	92	100

Table 2.1 – Mean Ratings for School Based Musical Activities

Gender and Year group	Playing an instrument	Listening to and discussing music	Singing	Music Technology	Learning about different styles	Performing	Composing
F	3.5	4.1	4.4	3.5	3.4	3.6	3.1
7	3.8	4.3	4.5	3.8	3.5	3.4	3.4
8	3.4	3.7	4.3	2.8	3.1	3.6	2.5
9	3.4	4.3	4.3	3.9	3.7	3.7	3.6
M	3.5	4.0	3.3	4.2	3.3	3.2	3.0
7	3.6	4.0	3.2	4.8	3.3	3.5	3.0
8	3.8	4.2	3.6	3.7	3.3	3.5	3.4
9	2.9	3.6	3.1	3.8	3.4	2.4	2.6
Whole Sample	3.5	4.0	3.8	3.8	3.4	3.4	3.1

Table 2.2 – Mean Ratings for Musical Activities Outside of School Curriculum

Gender and Year group	Listening to music alone	Listening to music with friends	Music lessons outside school	Playing music with friends	Going to concerts	Creating own music
F	5.7	5.4	4.4	4.4	4.8	3.8
7	5.7	5.5	4.6	4.6	4.5	4.1
8	5.8	5.4	4.1	4.1	4.9	3.6
9	5.7	5.3	4.5	4.4	4.8	3.7
M	5.5	4.8	3.9	4.1	4.2	3.8
7	5.6	4.6	4.1	4.0	4.5	3.9
8	5.6	5.2	3.9	4.6	4.5	4.4
9	5.4	4.6	3.7	3.3	3.7	2.9
Whole Sample	5.6	5.1	4.1	4.2	4.5	3.8