Singing Teachers Talk Too Much

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This paper draws on the reflective practice of teacher and student to identify the best pedagogical approaches used to facilitate the teaching and learning of singing. It draws on teacher and students observations at QCGU, collected during a project made possible through a GU Quality Teaching Grant in 2002. Ten students contracted to participate in the project, giving permission for their weekly studio lessons to be videotaped, committing to view the tape and write an observation log and report back to the teacher the following week. The role that both extrinsic and intrinsic feedback play in facilitating long term learning was noted. The relative priorities of implicit and explicit memory in the establishment of the singer's technique were defined. The effective acquisition of declarative knowledge or explicit memory delivered away from the studio in the pedagogy lectures was a significant conclusion. Greater use by the teacher of 'hands-on' physical guidance to assist the development of implicit memory and kinaesthetic awareness in the student was a deliberate change of teaching style. The teacher's security blanket of verbal explanation was abandoned in its traditional form, as a result of observation of student reactions during the project and correlation with research beginning to emerge on the real effectiveness of verbal instruction.

Setting the scene

I invite you to eavesdrop on a typical singing lesson—I'd like to think it is happening about twenty years ago but it could still be happening today—what might you expect to see and hear?

A young singer relentlessly singing up and down the scale, attempting to sing a song with both beautiful tone and depth of meaning and expression. Time is taken up with instruction on how to make the song sound beautiful with the use of extravagant images and metaphors—float on the lake like the elegant swan but paddle like crazy underneath, spin the wheel of air, carry the top of the phrase over the waterfall, 'don't let the sound touch the sides' and think like Dopey Dora, let that jaw drop! The teacher demonstrates—beautiful tone, how to breathe, how to shape the music, how to cope with that high note. The singing teacher is coaxing, describing, demonstrating, endeavouring to inspire—the singer is listening, imitating, and trying so hard to please!! The teacher thinks—"This young lady will never be a good singer, she just doesn't seem to understand what I am saying and I've run out of words!"

But to the teacher's relief, help arrives in the form of the scientific revolution in voice. Those difficulties that so many singers face can now be explained, diagnosed and prescribed for, by our new understanding of the physiology and biomechanics of the voice. The teacher is SO excited and of course wants to share all her newly acquired knowledge with her struggling student. And it is not only the physical but also the
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acoustic knowledge that has become accessible. Voice science has become an integral part of the pedagogy courses that are offered at tertiary level nowadays. And this includes the use of spectrographic analysis of vocal sound as a tool for teaching about vocal acoustics. We are proud to boast that we are up with the latest content! So explanations about vocal tract resonance, formants and formant tracking along with images of thyroid cartilages, laryngeal pull, abdominal breath management crowd into the already overloaded brain of the young singer who finally arrives at melt-down screaming "Just let me sing!"

But surely, if you understand it, you should be able to do it!

This reminds me of my son when he was a teenage armchair sportsman. He would watch Michael Jordan on the television and declare cynically "I can do that!" He subsequently became a mad keen basketballer and every afternoon after school he would shoot baskets for what seemed like hours—his patterns and approaches under and around the basket as creative and unpredictable as he could devise while the board on the side of the house tolerantly absorbed the drumming—he became pretty good at it. Thursday evenings he trained with the team then on Saturdays, the Club played competition. During these matches, his focus was on the game, not on the style and action of his afternoon or evening goal shooting sessions. And he became one of the team's top players. He may not have realised it, but he was relying on those practised skills to reproduce themselves just when they were needed. The repetition, the randomness, the imagined moves, the environment, all these factors played a part in the acquisition of skills which made him recipient of the Best and Fairest Player Award at the end of the year. So considering the basketball story, is there a parallel for singing?

Challenging the status quo

In educational terms, the commonality present in sport and singing is in the principles of motor learning. There is a growing body of research exploring the application of motor learning theory to the acquisition of music performance skills with some writers asserting transfer of principles from other media to singing. Specifically, investigation conducted into activities requiring hand-eye co-ordination have been the source of insight for voice researchers. From anecdotal evidence, such writing is beginning to impact universally on teaching styles in the voice studio: this paper begins to explore the specific impact on my own teaching. At a later date, I would like to continue this investigation using more systematic methodology to locate the general from the particular. To learn to sing, or for the purpose of this discussion, to acquire highly skilled control of bodymind events known as 'technique' in order to serve the expressive demands for communicating in performance, the singer does not need to be presently aware of the processes and principles to be able to create the physical skills and co-ordination. Rather, he or she relies on the response of the body or implicit memory in contrast to what Verdolini (2002) calls 'the type of 'book' learning or explicit memory' that other elements of the art, such as language acquisition or contextualisation of the aria in the Opera plot, require.

It is appropriate to look at the multiplicity of tasks a singer must confront and endeavour to define them in terms of learning theory. In simplest terms, declarative knowledge is extrinsic knowledge about the world and its properties and such knowledge
feeds the explicit memory of our bodymind. Procedural knowledge is intrinsic knowledge about how to do things and informs the implicit memory of our bodymind. (Verdolini, 2001). The physical act of singing basically requires procedural knowledge—that is, implicit memory. Motor learning is a process (Titze & Verdolini, 2002) or a procedure that informs the implicit memory, which can then be flexed in response to a variety of extrinsic stimuli.

The term bodymind is an attempt to ensymbol the unity of the physical processes that produce the concurrent psychological phenomena that all human beings experience (Thurman, 2000). The physical act of singing involves the pressurisation of air in the lungs that under the control of the abdominal musculator flows through the trachea, meeting the vocal folds which are set into a vibratory pattern. Such kinetic energy is converted to acoustic energy and as the sound travels through the resonance chamber of the vocal tract and is shaped by the articulators, it is transformed from a curious buzzing noise into something aesthetically meaningful. The subtlety of pitch, rhythm, dynamic and tone colour engages micro and macro systems of co-ordination. The ultimate control is a neuro-psycho-biological one! Let me now summarise in psychological terms the act of singing by drawing on the writing of Oren Brown, Emeritus Professor of Singing at New York's Julliard School of Music. He says it in three words Think–Let–Trust (Brown, 1997) Brown's Think means that the singers have a concept of what they are intending to do and before commencing to sing must focus their attention on this. Such concepts combine a multiplicity of extrinsic and intrinsic knowledge. Jerome Bruner states that singers needs to have created a mental map that permits them to follow a route from where they are to where they are going (Bruner cited in Blanton, 1998), which then relays a choice of action for the moment. The creation of this map is the student's responsibility, although the teacher's influence as a mentor can be crucial to this process. The multiplicity of concepts that are part of this mental map are constructed from every encounter that the student has ever had and is having.

Young singers whose only experience of singing has been the high school musical production and recordings of Madonna or Marina Prior, present with a very limited mental map! Such narrow focus disadvantages the singer's ability to respond in a lesson when change relies on established explicit memory. As a teacher, my response to this is to encourage all the young singers to listen to as many accomplished singers as possible, in live performance and on recording, to help create this mental map of expectations for good singing. They benefit from acquiring aural and visual skills of criticism based on an understanding of good technical co-ordination. One of the disadvantages of living in a modern society such as Australia, with its comparatively small population, is the low public profile of culture and the subsequent lack of omnipresent artistic expression capable of contributing to this essential mental mapping process. Having an image of the ideal can make the difference between mere repetitious practice and work that gradually improves physical co-ordination. (Summers, 1989 cited in Ohrenstein, 2003) The Let and Trust of Brown's instruction for singing are directions for the implicit memory and therefore rely on the establishment of effective motor skills. I see the teacher's task as facilitating the practice of skills required so that the student can rely on the instructions "Think–Let–Trust".
Similar to Brown’s philosophy, the Alexander technique bases its practice on strategies that address the processes that the learner needs, rather than striving to produce the end-product without regard for the due process. In the 1930’s, Aldous Huxley experienced the benefits of what we now refer to as The Alexander Technique, believing that it has the unique ability to deal with the problem of *end gaining* by focusing on the process or *the means whereby*. He was quoted as saying:

> One has to make the discovery for oneself, starting from scratch and to find what old F. M. Alexander called ‘the means-whereby’ without which good intentions merely pave hell, and the idealist remains an ineffectual, self-destructive and other-destructive end-gainer. (Huxley cited in McDonald, 1998, p. 35)

Mental mapping by singers encompasses an awareness or type of understanding of what they are doing at a particular given moment. The timing of the delivery of book-like information to the student is crucial as combining singing performance with anatomical lecturing is likely to result in neither action nor information being retained effectively. The imperative for singers to discover what they can do with what they learn, and accept the logic of their actions, is a pattern that demonstrates better long term retention of both intrinsic and extrinsic knowledge. (Blanton, 1998). We should never ask singers to be mindless robots but actively create the conditions in which they are able to establish their own schemata or ‘rules of behaviour’ allowing them to gradually accept and execute highly complex vocal tasks (Ohrenstein, 2003). Failure to make sense of actions results in failure to sustain change when the logic of the moment is lost. Teachers often experiment with crazy ideas during lessons in an effort to achieve a response from the singer. They rarely prove effective in the long term. A common example of such failure is also seen in masterclasses when a singer is presented with some crazy mental image that initially creates a difference but cannot be sustained away from the moment. Singing through the chimney in the top of the head is one such crazy image I recall losing its effectiveness once the master teacher left town!

**The project**

A Griffith University Quality Teaching Grant made possible a project that launched my present investigation into methods of teaching for the voice studio that will enhance the singer’s capacity and ability to learn. I am using documented reflections from both teacher and students on the weekly lessons recorded on video, to identify positive pedagogical approaches and interpolating ideas from the literature. Recognising that a singer learns through a number of different modalities, the project reveals a multiplicity of modes by which all necessary information for the developing singer is absorbed and acquired.

For the project, conducted across seven months, ten students contracted to participate, giving permission for their studio lessons to be videotaped, committing to view their weekly tape, to write a log of observations and to report back to the teacher at the next lesson. These ten students were all at different stages of vocal development and experience so consistency or comparison of change in all the subjects was never going to be sought. Rather, as the reflective teacher, from data compiled from the videotaped lessons, from the student observations and student perceptions of the effectiveness of
the project, I was able to identify the approaches that seemed to assist the consolidation of change in each student. I was able to observe and reflect on how the students absorb procedural knowledge needed for singing, using intrinsic and extrinsic feedback and psychomotor or bodymind target practice. The extrinsic feedback inherent in the videotaping of the lesson was for the student a variable tool. I observed over time, however, that the initial effectiveness of the videotaped lesson as a motivator for committed work from the student diminished. This may have had a number of causes, not the least being the repetitive and predictable nature of the videoed lesson.

In general, the project was declared useful and stimulating by the singers who enjoyed being able to listen to their vocal quality, observe body engagement and alignment, thus creating aural and visual concepts of themselves that in turn motivated their practice. Intrinsic feedback was measurable only by the student's themselves, however directions to 'notice', 'feel', 'observe', 'compare' became standard language within the lessons. It is an issue that motor learning cannot be observed directly (Titze & Verdolini, 2002) and because the resulting change from a gradual acquisition of motor skills is difficult to see, some singers believed that there was no progress and slowed down their effort. As the teacher, I was able to identify evidence of incremental change in the singers' levels of skill but this was difficult for the singers to assess themselves. I agree with Ohrenstein's suggestion that it takes many years of training for the performer to interpret (auditory and kinaesthetic) signals effectively—certainly for some, longer than the seven months of the project. As time passed, some of the students lapsed from the pattern of observation and feedback, perhaps becoming somewhat discouraged by the lack of significant, identifiable change and the usual complaint of not enough hours in the day.

All the modes of observation of the data confirmed my current understanding of how singers learn and suggested changes to my teaching practices. However, most significant was the way students consolidated the implicit memory needed for singing, through kinaesthetic feedback and psychomotor target practice. Motivated by the observation that intrinsic feedback was more readily triggered in the student with direct hands-on guidance, I deliberately incorporated more of this during lessons. (Schmidt and Wolfe, 1997) This approach, rarely accompanied by words and in contrast to the use of traditional wordy explanations, created a stronger impression and an immediate response in the students. In this information age, it is easy to be trapped in a declarative or extrinsic loop when the primary impulse for establishing vocal technique is procedural or intrinsic. (Blanton, 1998) Within the one-on-one of the singing studio, the teacher's own 'security blanket' of verbal explanation has its limitations as an effective teaching/learning device in the light of research into the employment of verbal modality for motor learning (Verdolini, 1997). However it is suggested that, in the early stages of development, when the singer's ability to identify kinaesthetic or aural differences in his or her performance is still developing, the use of inspirational word images and vocal demonstrations will help clarify what the singer needs to attend to (Ohrenstein, 2003). This should reassure teachers that we should not be struck dumb, but rather work at being smarter in choosing the timing and content of our verbal instructions.

Supplementary to intrinsic feedback, augmented or extrinsic feedback is information feed to the singer during the act of singing or directly afterward. In the lesson, this often
takes the form of 'No, that was too spread' or 'Your air didn't support the top note' or 'Not this [o], this [u]'! Findings from other formal research studies show that those who have practised with augmented feedback often perform worse than those who have had no feedback. Augmented feedback seems to enhance performance but not retention—it may even degrade learning. The learner may use such feedback as a crutch (Schmidt & Wulf, 1997) only being able to sing well at the instruction of the teacher. Reflecting on the videoed lessons, I became more aware of my own use of language—in general there were too many words too often, diagnostic and critical and sometimes not specific enough to be helpful.

Motor learning and feedback

Verdolini has published extensively on motor learning and feedback with reference to the teaching of voice and the learning of singing. I am using her five stated principles for Motor Learning (Verdolini, 2002) as the theoretical framework for the reflections from the project, in addition to drawing on my empirical knowledge of students' actions and reactions in general, to give weight to her assertions about voice training.

Principle No. 1: Motor learning belongs to a type of learning that is distinct from "book learning"

Leon Thurman (Thurman, 2000) states The first sign of progress is confusion. However this does not refer to the confusion that results from overload of information that we as teachers can put on our students. The fact that information available to the singer and the teacher about the mechanics and make-up of the vocal instrument is taught as a discrete course within the Pedagogy strand at the Conservatorium is recognition of the need to separate the declarative from the procedural, extrinsic knowledge from intrinsic knowledge, if the aim in teaching singing is motor learning for the bodymind. On some of the earlier videoed lessons, long pauses in activity while the teacher explained the principles of how the voice works showed up as unhelpful to the task at hand. They may have made me, the teacher, feel good about the content but the student's understanding of such information had no direct benefit in a better performance. Some students were articulate enough to put into words a description of what they believed was happening when they sang, however this skill had no correlation to improvement in the actual singing. (Titze & Verdolini, 2002). There is anecdotal evidence that some of our best singers are the ones who struggle with the traditional academic work and don't attempt to understand how their voices work—they just do it! Perhaps such evidence lends weight to the rumour that tenors/singers have resonance space where their brains should be. From my reflections during the project, I suspect that extrinsic knowledge necessary to observe and reflect on the video disadvantaged the effective acquisition of the necessary procedural knowledge at the same time. This certainly is in line with the statement.

The clear implication from such experimental observations is that motor learning indeed belongs to a system, or type of process, that does not require awareness and specifically, awareness of the mechanical principles being learned. (Verdolini, 2001, p. 115)

The students who responded most positively to lessons in which their attention was drawn to body activity, or they were encouraged to imitate the teacher's model, or they
were physically manipulated by the hands-on activity of the teacher, were those who had previously taken the Pedagogy courses. This pointed to the value of storing explicit memories for later referral.

**Principle No. 2: Motor learning belongs to a type of learning and memory that occurs without awareness**

Much of the repertoire that singers perform is highly charged with character, emotion and narrative, however for successful voicing, the beginning singer primarily needs motor skills. Such data are processed by the bodymind outside of conscious awareness. What was interesting, and confirmed what many good singing teachers know empirically, was the inability of the students to hear or see their own improvement and progress but the teacher's confidence that a long range picture would reveal such progress. The videoed lessons over nearly two semesters revealed some rewards. Practice undertaken by the students incorporating the repetitive patterns from their lessons revealed changes in vocal behaviour which could be interpreted as the establishment of implicit memory capable of reproducing vocal skill at call during the singing performance. The students who conscientiously practised, referring to the patterns of the lesson as the guide gained a consistency and confidence in performance through the duration of the project. However mastery of the singing act takes a significant passage of time for each singer. Robert Frost suggested that

> Education is … hanging around until you've caught on.. (Frost, cited in Poon-Teng-Fatt, 1998)

This really does apply to the process of learning to sing, as consolidation of implicit memory happens over an extended period of time and in no predictable stages or patterns. And as teachers of singing we have always felt the need to extend the singer's period of training with extra time, often years. In a tertiary institution where assessment of student learning is built into the system, recognition that motor learning takes a certain span of time, has informed the rate and type of assessment employed. For example, at QCGU we give the whole year to the process of vocal skill acquisition and voice development before administering major evaluation. Reflecting on some of the traditional studio methods for teaching singing, many practices were not too incorrect—repetition of musical patterns until the body recognised the pattern of behaviour, images that distracted the singer from the problem at hand, reliance on the emotional connection to engage the implicit memory of poised and energised voicing. Perhaps NIKE was cleverer than we realised with the slogan for their customers—**Just Do It!** I still harbour the idea of painting a large swoosh on my studio wall as a large reminder for my students!

**Principle No. 3: Motor learning appears to require attention to sensory information**

Verdolini asserts that there is little basis in the scientific literature to support the use of verbal instructions about the mechanics of singing or any other motor behaviour. (Verdolini, 2001). For This strongly influenced the pattern of language I used during the lessons during the project and since, and I believe it changed my ability to constantly, not just occasionally, facilitate the students' learning. Declarative statements became fewer and the invitation to **notice or attend to** aspects of vocal production became common. This
approach was appreciated by the students who took delight in building their ability to sense, showing that this is a most effective form of feedback for a singer—it is intrinsic and requires the singer to allow the singing to just happen rather than changing it by trying or doing! Bruner who identified the mental map states that students will better understand when they first have hands-on experience related to the idea, so singing first, followed by any necessary explanation is the essential pattern for change.

It is right that we should give credence to Gardiner’s Theory of Multiple Intelligences (Silver, Strong, & Perini, 1997) and note that any singer with little kinaesthetic ability will have to work very hard to acquire that ability, to notice the sameness or difference by degree of any physical sensations, in acquiring sensory information to act as intrinsic cues for vocal performance. I deliberately use phrases like "Notice what this feels like." "As you sing, pay attention to the sensations of resonance…." "Pay attention to the increasing sense of breath energy as the pitch rises" Did you notice the diminution of sound for the high notes", "Can you feel the bikini line connection?". An example of attention to kinaesthetic sense specific to singing is the modelling of a sound by the teacher followed by the student’s reproduction of the same, with attention not to the sound so much as to the adopted physical co-ordination needed for such a result. This is an approach used regularly in lessons. As well as oral modelling, bodymind attention was focused by hands-on physical manipulation of the student, thus employing another non-verbal form of communication—for example adjustment of the sternum, the head and neck, relaxation of the jaw, bending the knees, checking the diaphragmatic engagement, loosening the arms. Today one doesn’t do this without the student’s expressed permission but such body awareness may also involve students experiencing the teacher’s physical modelling too, especially with regard to abdominal breath management.

**Principle No. 4: Motor learning is enhanced by learner effort**

As a learning tool, the extrinsic feedback—primarily the visual feedback from viewing their own performances on video—was identified by the students as being obviously valuable. The struggle to interpret the visual information by themselves, drawing on cognitive knowledge already acquired in Pedagogy lectures, created strong reassurance of real learning happening for the students themselves. Sometimes, during a lesson there appeared not to be much progress made in changing or developing the vocal skills of the student. However these lessons proved to be consolidations of fundamental skills and presented models of desirable patterns of practice so necessary for the young singer. From week to week lessons were very similar in structure, despite continually challenging the singer to look at the same problems and the teacher making new suggestions to find the constructive solutions. The predictability of the videoed lesson with viewing and observation follow-up represented repetition. that does not aid long term retention of ideas. However it has been postulated that significant learning happens when real life experience happens. As the teachers and mentors of talented students, we should avoid oversimplification of the task and instruction, and endeavour to mimic the demands of this real world. Stretching the abilities of the singer by demanding work at progressively higher levels is a substantial aspect of learning as well as through socialisation into the norms and behaviour of the profession during the annual Opera production. Such a
challenge requires the student to commit thought and effort — an increase in breath energy, muscular co-ordination, language ability are just a few of the skills benefiting from such a scenario.

**Principle No. 5: Motor learning does not involve “trying”**

Probably the most difficult instruction for singers to give themselves is to let the bodymind do its job without trying or doing. Brown's instructions for the singing act—"Let–Trust" recognize this principle. The roles that aural and kinaesthetic perception play are vital and bring physical freedom to the motor process when the singers stop 'doing' and just 'let'! To quote one of the students "If I think too much about what I am doing, I'm likely to tense up" Engaging muscles extrinsic to the bodymind equilibrium is usually false and unnecessary effort and introduces tension that compromises optimum production. The ability to trust the autonomic process is basic to the final subtle and micro control system that we call vocal technique. Noting the numerous occasions when students are challenged during lessons to not try, it is obvious this is a major stumbling block for many.

The learning environment is an important catalyst for learning. Students needs to experience in some manner the natural complexity of the real world. The teacher's first strategy towards achieving this is in the challenging nature of the repertoire chosen for study, pieces not merely vehicles for teaching and learning but able to be programmed in a professional manner. Secondly, for the performer, reality means the professional stage in either real or simulated form. It was significant to observe that many students who presented with the problem of trying too hard in the studio experienced greater freedom on stage as a member of the Opera production, where costume, characterization, movement and the imperative to be 'in the moment' provided distractions. This is yet another reason why such real world experiences are essential for the development of the student singer.

**In summary**

Recognising the essential role of motor learning in voice change and development can bring a whole new perspective to the approach in the studio. For the student singer, being able to bring attention to sensory information is one secure pathway to success. Sensory or perceptual processing is central to motor skill acquisition. As teachers, we should beware of talking too much and doing too little. Such theory can guide the teacher to better or best practice and certainly the evidence now suggests that too much hot air in the studio lesson leaves little chance for the student to attend to and build up the essential implicit memory needed to develop their singing skills. A strong theoretical framework for teaching gives the teacher greater freedom to experiment and respond to the individual needs of the students. Although a good teacher will hold a vast body of knowledge and an understanding of educational principles, the activity of each individual lesson is in response to the student. And it seems timely to put the question "Could we learn to swim without getting into the water?" Teachers of singing, cut the talk and let them sing!
References