2010

The constructed voice: a socio-cultural approach to teaching and learning singing

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Title page

THE CONSTRUCTED VOICE: A SOCIO-CULTURAL APPROACH TO TEACHING AND LEARNING SINGING

A thesis submitted in fulfillment of the requirements for the award of the degree

DOCTOR OF PHILOSOPHY

From

UNIVERSITY OF WOLLONGONG

by

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Faculty of Education

2010

Dedication

To the memory of my father Rev. Dr Sione Latukefu

Declaration

I, Lotte Mele Vaimoana Latukefu, declare that this thesis, submitted in fulfilment of the requirements for the award of Doctor of Philosophy, in the Faculty of Education, University of Wollongong, is wholly my own work unless otherwise referenced or acknowledged. This document has not been submitted for qualifications at any other academic institution.

Lotte Latukefu

Abstract

The present research study begins addressing the lack of empirical and systematic research on how students develop singing skills in an environment that is not the traditional one-to-one learning model. This study provides a conceptual explanation of how students learn singing in a socio-cultural environment by connecting theoretical and methodological considerations to the design of the teaching environment. Socio-cultural theories were incorporated into the design of a singing class environment that encouraged self-regulated learners who learn from social interaction with each other. The study also documents what kinds of strategies students develop as they try and understand the complex act of singing. It provides evidence supporting the theory that students benefit from the type of environment a socio-cultural approach provides. This includes peer interaction, reflection, introduction of scientific concepts concerning the voice and a philosophy of co-construction of learning with the teacher.

The research used a qualitative approach, which endeavors to make sense of, understand and interpret the data. To capture the developmental nature of this pedagogical project, and the context in which it was carried out a design-based development research methodology was employed. Central to this approach was the flexibility of the design and capturing social interaction. Teaching strategies underpinned by Vygotsky's theories of learning, were introduced into the course over a number of years. These strategies were evaluated and a variety of data types were analysed in order to address issues of trustworthiness of data, credibility of interpretation and believability of account. These data types included student and teacher reflective journals, surveys, focus groups and subject and teacher evaluations. The introduction of design-based research methodology into the field

of singing offers a means with which other singing researchers can develop models of singing that are grounded in educational theories of learning.

Finally educational principles emerged from the study that are transferrable to a similar context and can be used by teachers as part of curriculum renewal and review.

Acknowledgements

I would like to express my immense gratitude to my partner David Rooney and my sons Miles and Marley who encouraged me, gave me time to write, made me cups of tea and sent me out on long runs. In the middle of this creative outpouring came the unexpected arrival of our 3rd son Lonnie. I would like to thank my mother Ruth for braving NSW rail almost every week to look after the baby while I wrote.

Thanks also to my supervisors Dr Irina Verenikina and Associate Professor Wilma Vialle for their suggestions about methodology, theoretical discussions and wonderful support throughout the process. Thanks also for encouraging me to stop writing when I might have carried on for years.

A faculty scholar's grant in 2008 from ALTC and the University of Wollongong and an equity scholarship in 2009 from the University of Wollongong allowed me precious time from teaching in which to carry out the research and write.

Lastly, thanks to my students without whom this project could not have existed. They were generous with allowing me to collect data and encouraging of my projects. It is their voices that have really created this work.

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Chapter 1

INTRODUCTION

Music conservatoires and universities are increasingly finding themselves under pressure from funding bodies to increase student-to-staff ratios. In a recent example, the Victorian College of the Arts in Australia is being forced to consider a new curriculum for 2011, which might include adopting a less intensive teaching model and increasing student-to-staff ratios. Their Faculty Dean, Sharman Pretty spoke to the media about the shift in curriculum as a way of "contextualising training in the world of higher education that would 'empower' students' long-term learning and make them more competitive" (Trounson, 2009, p. 26). There is often a lack of alignment between a conservatoire's curriculum and pedagogical approach and the learning outcomes relevant to a workforce destination. "Put bluntly, is our curriculum and traditional pedagogy setting students up for failure as 'lifelong' learners?" (McWilliam, Carey, Draper, & Lebler, 2006, p. 26) Paul Roberts is a concert pianist, writer and teacher, and fellow at the Guildhall School of Music and Drama. He wrote:

> I return to my journal. I am less comfortable teaching the piano in the conventional sense-the how to play sense-in the case of advanced students. I find myself questioning the whole basis of why they are devoting four or more years of advanced education to trying to master the enormous intricacies of an art that will little serve them afterwards-at least, not in terms of 'being a concert pianist'. Only the tiniest number over a large number of years are ever going to have careers as solo pianists. (Roberts, 2005, p193)

Personal Background

My own professional background is as an opera singer trained at the Canberra School of Music, Queensland Conservatorium and Manhattan School of Music. I returned to Australia in 1997 and took up a position as Lecturer in Singing in the Faculty of Creative Arts at the University of Wollongong, a regional university in Australia. When I started teaching singing I used a traditional conservatoire model of one-to-one studio lessons. However, the cost cutting that is now hitting some of the bigger institutions came to my department much earlier. In 2001 the Dean of Creative Arts announced that the music department in which I taught singing would be amalgamated with the theatre department. There had been hints that this move was afoot, but once the decision was made, change was swift. It began at auditions where students were chosen for their acting skills and their singing potential rather than their polished singing skills. The biggest change however occurred in the mode of teaching. Overnight my one-to-one lessons became small groups. I also had to cope with differing levels of skill and experience in students. Some students were interested in extending their voices and learning classically, others just wanted to be able to sing competently. They were used to working in small groups from their acting training.

A study carried out in a conservatoire in the UK (Gaunt, 2005) analysed the perceptions held by 20 principle studies teachers about one-to-one tuition, its aims, processes and context. Findings suggested that while there was a desire from teachers to facilitate self-regulation and autonomy in students, it was the transmission of technical and musical skills through teacher-led reflection-in-action that dominated. This potentially inhibited the development of self-regulation and an individual artistic voice in students.

Historically, the predominant relationship between teacher and student in vocal instruction has been described as a master-apprentice relationship, where the

master is looked at as a role model and a source of identification for the student, and where the dominating mode of student learning is imitation (Jorgenson, 2000). Despite the negative connotations of imitation as a learning style, research by Davidson & Jordan (2007) concluded that one-to-one teaching empowers student learning more easily than other approaches and should be encouraged. They qualify this, however, by acknowledging that "cultural and political agendas of various state education systems will impact upon how this teaching and learning develops in its various physical environments, and in whether the lessons remain one-to-one or group-focused, and how much responsibility is left with the student and his or her peers" (Davidson & Jordan, 2007, p. 742).

The impetus for the present investigation came when I realised that if I were to survive in this new department I had to make changes to the way I was teaching. A pilot study was carried out (Latukefu, 2007) when Theatre and Music were amalgamated. The study investigated students' reactions to being taught both spoken voice and singing voice in the new course and questioned whether they found it useful to have different vocal perspectives. Students were asked to anonymously provide information that was collected and tabulated into four recurring themes. The information gathered firstly described the most important or effective and the least effective techniques the students had learnt through studying both singing and speaking. Secondly, a questionnaire was administered in which the students reported any previous training in either singing or speaking. Thirdly, students kept personal reflective journals as part of assessment in class and these journals were collected and analysed. Twenty-nine first year students took part in the pilot study and two teachers. Fourteen students had previous singing training, seven students had training in singing and spoken voice, two students had training only in speech and six students had no previous training in singing or speech. The

results from the 2005 pilot study (see chapter 4) prompted an even greater collaboration between the spoken voice teacher and the singing teacher and each week the teachers meet to discuss the progress of students and plan directions for the course. The pilot study also prompted the current research that sought to understand the kinds of strategies students employ in a non-traditional conservatoire environment in order to achieve improved performance.

I began to investigate educational theories of learning and became intrigued by the writings of Vygotsky (1987) on how children learn through participation in socio-cultural practices. I felt that these theories could be adapted to a higher education environment and so they became the basis for the theoretical framework that underpinned the design of the learning environment.

I assumed multiple roles in the present investigation. These included teacher carrying out the pedagogical investigations and assessing the students; course designer, framing the socio-cultural context for the study; and researcher, interacting with participants and writing up field notes.

A European study challenging of the master-apprentice model took Foucault's (1972) concept of discursive practice as a point of departure and found that academies of music are characterised by the extensive individualisation of teaching and learning available to the students and a high degree of specialisation on the part of the staff and students. Despite the individualised organisation, however, academy teaching practices are highly institutional in their character. "The teaching is heavily bounded in the historical practices of music performance" (Nerland, 2007, p. 399). The level of change in conservatoire is slow as identified in a UK study that explored changes made to teaching practices at conservatoires (Davidson & Smith, 1997). The authors noted that a report made in 1965 showed

that many conservatoires in the UK offered similar curricula from their opening (some of them had opened in the nineteenth century) up to the date of the report's publication.

It is this connection with traditional teaching practices especially that of the master-apprentice model that makes it difficult to bring about change in the conservatoire. The most difficult task in the development of a new environment in the present study was to challenge some of the dominant norms that had been part of my own training as an opera singer and were still continuing in conservatoriums around Australia. I agreed after a meeting with the head of my department to place singing in the less than principal position of a skills subject alongside movement, character analysis and spoken voice. It was not easy to challenge the rules and expectations of the culture in which I had been trained. It was also difficult to allow singing to be seen as part of a range of skills that students needed in order to become excellent performers. Possibly only singing teachers trained in conservatoire will have any real understanding of what a sacrifice this seemed at the time.

The investigation raised questions as to my role as a teacher. I have always tried to do everything within my powers to solve the technical and musical problems that my singing students present to me in lessons. Often lessons went overtime in order to do this and I prided myself in my unswerving devotion to helping my students become better singers within the space of the lesson. Now I had classes that began and ended at a certain time and there were many students to listen to within the limited time so it was not possible to give the individual attention I had always thought was absolutely necessary. An investigation carried out by Green (2006) found that when music teachers were asked to stand back and observe rather than offer help when students got worse in various ways, the

teachers were surprised to find that students managed to improve themselves without input. A quote from one of the Head's of Music encapsulates my own experience beautifully. "In a normal class I am working so hard, I am just making such an effort; they're not working nearly as hard as I am. In this class they are doing the work" (Green, 2006, p. 109).

In the USA, Vogel (1976) and Holden (2002) showed that there was something to be gained by introducing peer involvement to the teaching process. Holden (2002) argued that group lessons meant that teachers did not have to repeat themselves over and over and would therefore feel more motivated and invigorated in their teaching. He did not mention the inter-mental benefits (Vygotsky, 1986) of students learning from each other. Vogel (1976) discovered that student learning benefited from the atmosphere created by "so many thoughts, concepts, and suggestions flying about" (p. 21). Forderhase (2007) carried out a study that investigated teacher attitudes to team teaching. Seventy-one percent of teachers surveyed said that they would co-teach a student if the other teacher and the student agreed. However in the comment section provided in the questionnaire and filled out by 50 of 203 respondents, the largest group of comments showed teacher concern that exposure to more than one vocal teacher at a time would lead to confusion for students. In the UK Hallam (1998) described peer influence as one of the most powerful influences on students' musical behavior. Modelling was singled out as an important aspect of social motivation and she noted that students can have a range of role models, which might include their teacher or other students.

Another study carried out in the UK investigated students' perceptions of Master Classes (Creech et al, 2009), which are high-profile conservatoire events where well-known artists coach advanced students: alternatively, experts in a

certain style of playing advise students on this aspect of their work. Master Classes can also be a forum in which instrumental or vocal teachers give performance classes for their own and other teachers' students. The researchers found that while students considered Master Classes to be beneficial because of the multiple perspectives that they offered as well as access to a professional community of practice, there were often learning barriers created through performance anxiety and issues relating to the problematic notion of participation as an audience member. The model of learning designed as part of the present research emulated a Master Class in many ways and it was important to take account of the challenge posed by Creech and collegues (2009) about students feeling that there was no value in being an audience member. Reasons given for this were that "they did not understand what they could learn from other people's performances or that the points raised were not necessarily relevant to the audience" (Creech et al, 2009, p.325).

An important aspect of my own research that encouraged peer learning and multiple perspectives was dealt with in the studies mentioned. An article challenging conservatoires to be open to innovative pedagogical possibilities and alternative models of learning, opened up issues around the values and limitations of traditional pedagogy for students (McWilliam, Carey, Draper, & Lebler, 2006). The researchers documented a non-traditional instrumental learning model, which emulated the learning practices of popular musicians in the broader community. A structured reflective journal and an evaluative self-reflection described as a distinctive feature of the program acted to 'add a layer of formal knowledge' (McWilliam, Carey, Draper, & Lebler, 2006, p. 29). Peer learning was valued over a master-apprentice learning model and the program was very successful judging by student evaluations. This study provided useful data for developing the learning

model in the present study as it successfully incorporated socio-cultural practices such as peer learning, co-constructed learning, authentic learning and reflection.

Kamin et al (2007) investigated the psychological, social and environmental influences on the talent development process of non-classical musicians. Of most interest in relation to my own study were their findings on peer influence. The writers found that for non-classical musicians peer influence was exclusively positive, but both positive and negative for classical musicians. They suggested that this needed to be considered within the context of the domain if it is to be used.

The *Investigating Musical Performance (IMP): Comparative Studies in Advanced Musical Learning* was a study designed to investigate how classical, popular, jazz and Scottish traditional musicians deepen and develop their learning about performance in undergraduate, postgraduate and wider music community contexts (Welch et al, 2008). In this particular paper, researchers investigated the effect of musicians' gender and chosen musical performance genre on undergraduate and postgraduate learning. They found that regardless of musical genre, the musicians had many aspects in common in terms of their core musical identities and behaviours. In my own study I was interested in the effect that changing the role of the singer in the learning process could have on the culture of the course and this included core musical identities and behaviours.

Riggs (2006) developed a philosophical model for studio instruction based on flow theory, developed and researched by Mihalyi Csikszentmihalyi (1997). The model Riggs proposed, was concerned with development of the "whole" student to serve as a 'philosophical supplement to studio instructors who may not have received much training in developmental issues, educational theories, or related facets of the psychology of learning and performance' (Riggs, 2006, p.

176). Riggs suggests that applied studio instructors move away from the master-apprentice model to one where the teacher is a co-constructor of knowledge. In response to Riggs' paper, Freer (2006) proposes situating her model 'in a constructivist paradigm where instructional scaffolding becomes a dominant component of the teaching and learning process' (Freer, 2006, p. 227).

Another study that emerged from the IMP project (Welch et al., 2006) explored the transition from music undergraduates to professional status and dealt with the question of how higher education experiences might help students make this transition (Creech et al., 2008). Part of the present study was concerned with designing a curriculum that would encourage self-regulated learners who could learn after graduation and it was important to consider the implications of the findings from the IMP study in relation to my own research, especially those related to supporting students to develop self-discipline and autonomy.

An investigation of teacher research in the conservatoire emphasised the need for self-assessment and peer assessment in a conservatoire as they provide "stations for reflection and triangulation along individual learning paths (Purcell, 2005, p.230). Self assessment was thought to challenge students and teachers to formulate assessment methodologies that provide a rigour which can validate personal theory.

Chapman (2006) used the term holistic singing to describe her philosophy of singing. She developed a teaching model that provides useful tools for singing teachers. At the core of the nucleus or satellite are components she considers to be basic building blocks for the voice. They are primal sound, postural alignment, breathing and support. Her model developed from a linear one in which one part led to the next, to a model positioned in a way that allows the components to be revisited frequently from any other component. The components also interacted

with each other directly, which corresponded to Vygotsky's ideas of learning being an organic and interdependent whole rather than separate components (Liu & Mathews, 2005).

All of these proposals for alternative models had components that could be related to the present study. Many of them were concerned with content knowledge rather than the process of learning; others did not relate solutions to a theoretical framework (Reeves, 2000). Finally none of the studies produced "design principles" that I could use to develop my own model.

The Purpose of the Study and Research Questions

The purpose of this study is to develop educational principles of singing in a socio-cultural environment, based on empirical evidence of how students learn singing, using Vygotskian notions of the zone of proximal development, mediated learning, scientific and everyday concepts, co-construction of knowledge, inter-mental to intra-mental learning and transformation of practical activity. The study also aims to design a curriculum, which endeavours to develop qualities such as reflection, critical thinking, responsibility and self-regulated learning in students who learn from social interaction with each other.

Research Questions

Central Research Question

What learning strategies do students develop in a socio-cultural pedagogical environment?

Sub-questions

What role does reflection play in developing students' singing?

- How do singers transform their spontaneous concepts of singing to scientific concepts?

- What is the process involved in the creation of classroom environments in which the critical discernment of quality becomes a key aspect of learning?
- What effect does changing the role of the singer in the learning process have on the culture of the course and graduate qualities such as reflection, critical thinking and responsibility?

The present research study begins addressing the lack of empirical and systematic research on how students develop singing skills in an environment that is not the traditional one-to-one learning model. Documentation of the processes involved in the development of the model, the experience of the students and their perceptions of how their singing develops help to explain the evolution of the model.

Significance of the study

It is the development of knowledge that can be used not only in practice, but to inform other practitioners that is particularly significant to this study. The study provides a conceptual explanation of how students learn singing in a socio-cultural environment by connecting theoretical and methodological considerations to the design of interventions. The study also documents what kinds of strategies students develop as they try and understand the complex act of singing. This study provides evidence supporting the theory that students benefit from the type of environment a socio-cultural approach provides. This includes peer interaction, reflection, introduction of scientific concepts concerning the voice and a philosophy of co-construction of learning with the teacher.

Theoretical Framework

Part of the argument of this thesis is that the socio-cultural theories of Vygotsky can be used to respond to the research questions. Socio-cultural theory has been previously employed within music education research (Barrett, 2005; Welch,

2005). These studies reflected a shift from the experimental laboratory, to study children's engagement with music in a range of authentic settings (Barrett, 2005). Barrett (2005) was particularly interested in Vygotky's theory of the Zone of Proximal Development and understanding the role of play in children's musical development. These interests led her to examine children's participation in communities of practice (Barrett, 2003; Barrett & Gromko, 2002). The present study is underpinned at all times by the work of Vygotsky and it is this constant reflection on Vygotskian theory that informs both the substantive and methodological theory of the study. Links are made between the research questions and the following theoretical concepts of Vygotsky:

Zone of Proximal Development

Vygotsky's (1978) theory of ZPD or Zone of Proximal Development promotes the idea of a novice performing a range of tasks that cannot be accomplished alone, but in collaboration with an expert are able to achieve. The emphasis is on the collaboration and eventual shared understanding that develops between the expert and novice. To reach the learner's ZPD, the expert's assistance should be slightly above the level of the learner's independent performance, but provide enough support to enable them to complete the task (Vialle, Lysaght, & Verenikina, 2005). By designing the classroom environment in a way that made use of peer learning and reflection I was also responding to findings by Gaunt (2005) in which she stated that "further research needs to be undertaken to establish the particular strategies and ways of structuring instrumental/vocal tuition in a conservatoire that most support the development of self-confidence and autonomy in learning and the ways in which these may be affected by the particular dynamics of one-to-one teaching/learning" (p.26) . Vygotsky discussed the ZPD in terms of assessment and instruction. He was interested in assessing the ways in which learners make

progress. He endorsed the notion that formal instruction, which moves ahead of the student's development, is in itself a source of development (Daniels, 2008).

> The formal aspect of each school subject is that in which the influence of instruction on development is realized. Instruction would be completely unnecessary if it merely utilized what had already matured in the developmental process, if it were not itself a source of development. (Vygotsky, 1987, p. 212)

Scientific and Spontaneous Concepts

Vygotsky's theory of concept formation is related to the theoretical view of learning as a socially and culturally mediated process, which brings together the individual experience of the learner and the wealth of the theoretical knowledge accumulated in society (Vygotsky, 1986). *Spontaneous or everyday concepts* refer to the individual practice; they are the result of spontaneous, empirical "generalization of everyday personalised experience in the absence of systematic instruction" (Karpov, 2003, p. 171). In pedagogical literature they are connected to the notion of prior knowledge and are often referred to as experience-based concepts (Otero, 2006). They are rich in personalised experience and well suited to working in a particular context. However, everyday concepts are inextricably tied to a learner's concrete experiences, they are unsystematic, not easily transferable and not conscious (Karpov, 2003). They are likely to include misconceptions and are "often wrong" (Karpov, 2003, p. 171).

Scientific concepts represent the body of knowledge that has been built up through scientific research and are often referred to as academic concepts (Ortero, 2006). Scientific concepts are acquired consciously, according to a certain system of formal instruction. They are generalised, systematic and are abstracted from

concrete experience, and therefore are easily transferable from one context to another (Vygotsky, 1986). This formal instruction however relies on co-operation and collaboration with the teacher:

> The development of the scientific concept, a phenomenon that occurs as part of the educational process, constitutes a unique form of systematic cooperation between the teacher and the child. The maturation of the child's higher mental functions occurs in this co-operative process, that is, it occurs through the adult's assistance and participation (Vygotsky, 1987, p. 168).

The acquisition of scientific concepts helps to mediate students' thinking and problem solving and restructure their spontaneous concepts (Karpov, 2003). Voice science researchers (Chapman, 2006; Estill, 1996; Kayes, 2004; Miller, 1986; Shewell, 2009) encourage singing teachers to communicate scientific concepts in teaching as a way to develop and protect the voice, however, they do not focus on the effective way of teaching these concepts. The present research called on Vygotky's theory of converging everyday concepts that students hold with scientific concepts about singing in order to best facilitate the process of learning.

Transformation of practical activity

Vygotsky (1978) wrote about the importance of the convergence between speech and practical activity in the development of intellect.

> In the process of solving a task the child is able to include stimuli that do not lie within the immediate visual field. Using words (one class of such stimuli) to create a specific plan, the child achieves a much broader range of activity, applying as

> *tools* not only those objects that lie near at hand, *but searching for and preparing such stimuli as can be useful in the solution of the task, and planning future actions*…Thus, with the help of speech children, unlike apes, acquire the capacity to be both the subjects and objects of their own behaviour. The speaking child has the ability to direct his attention in a dynamic way (Vygotsky, 1978, p. 26, p.36).

Reflection and self-assessment were introduced to students enrolled in the singing component of the Bachelor of Creative Arts in order that they "view changes in (their) immediate situation from the point of view of past activities, and (they) can act in the present from the viewpoint of the future" (Vygotsky, 1978, p. 36).

Inter-mental to Intra-mental learning

Singing teachers are concerned with individual development and although "Vygotsky's (1978) 'general genetic law of cultural development' asserts the primacy of social in development" (Daniels, 2008, p. 12) it also shows that he was concerned with individual development. While it is the interchange that occurs between individuals in the group that contributes to the learning there is also a change that happens as the individual internalises the information.

> *An interpersonal process is transformed into an intrapersonal one.* Every function in the child's cultural development appears twice: first, on the social level, and later, on the individual level; first *between* people (*interpsychological*) and then *inside* the child (*intrapsychological*).
>
> (Vygotsky, 1978, p. 57)

Socio-cultural is a term used by Wertsch (1991) in order to understand how mental action is situated in cultural, historical and institutional settings. This definition suits the present study because singing teaching is firmly situated in cultural, historical and institutional settings. Vygotsky wrote that the keystone of his method the "dialectical approach, while admitting the influence of nature on man, asserts that man, in turn, affects nature and creates through his changes in nature new natural conditions for his existence" (Vygotsky, 1978, p. 60).

Methodology

I will now discuss how the research was carried out including the methods and techniques employed to generate data. In this section I will also provide a theoretical justification for choosing a design-based research methodology for the study.

Following the steps mapped out by Reeves (2000), I began with a literature and document review to understand the field. I also consulted with the voice teacher at the university who was a qualified practitioner in the related field of speech pathology, on methods speech pathologists use to develop self-efficacy in patients as well as scientific concepts relevant to professional vocal use. This helped me to gain an understanding of how teaching singing had developed and changed within my own course and also what was happening around the world in relation to the teaching and learning of singing and spoken voice. The review of literature and discussions with the voice teacher assisted me in analysing the practical problems that I now faced teaching in classes as opposed to one-to-one lessons. In addition to this I attended singing conferences and workshops on voice where I spoke to other practitioners about my situation and sought advice from them on ways to proceed. Finally I contacted academics in the Faculty of

Education at the University of Wollongong who pointed me in the direction of Vygotsky and socio-cultural theory.

The next step in design-based research is to develop solutions to practical problems using a theoretical framework. As the course designer I set about designing and developing pedagogical interventions underpinned by Vygotskian theory. These interventions were tested and evaluated in the authentic classroom situation and then changes were made and the interventions were carried out again. The interventions consisted of transforming the classroom environment from a traditional one-to-one studio to a class in which peer learning and modelling dominated, introducing peer assessment and integrating everyday concepts and scientific concepts of singing into the learning. Surveys and focus groups were used to inform the design of certain interventions. Purposive sampling was carried out in order to ensure that gender and indigenous and international students of the student population were represented in the sample.

The participants in the study were three different cohorts of students who were studying singing skills as part of their Bachelor of Creative Arts. Each cohort continued in the study throughout the period of their full enrolment, which was three years, although with the last cohort only 2 years of data was collected. Students were recruited on a voluntary basis and could withdraw their consent at any time. All students in the cohorts gave consent to participate in the study and while there was a natural attrition due to dropping out of University, the students participated in the investigation for the entire period of their enrolment.

Self-reflection was introduced in the form of journal-keeping and the students gave permission for their journals to be analysed at the end of each university session as part of the data collection which would inform the design. At the same time anonymous teacher and subject evaluations were administered to

students by the University and my extensive field notes were also analysed as part of the evaluation of the transforming environment and the effect of peer learning on the students' perceptions of their own learning. At the end of each session the process was evaluated and documented and I began the cycle again using data from the evaluations to inform the design of the next iteration.

Singing is a skill that develops over time. In order to understand this development we must observe the transitions that occur in individuals as they become more adept. Wertsch (1991) maintains that one of the fundamental assumptions of a socio-cultural approach is that what is described and explained is human action. A component of the socio-cultural approach is to analyse the process. "Genetic analysis in Vygotsky's approach is motivated by the assumption that it is possible to understand many aspects of mental functioning only if one understands their origin and the transitions they have undergone" (Wertsch, 1991, p. 19) .

As indicated the aim of this research was to adopt and adapt a Design-based research methodology in order to carry out the aims and purpose of the research. Design-based research, also known as development research, is concerned with developing broad models of how humans think, know, act and learn (Barab & Squire, 2004). It uses formative evaluation research methodologies, which are naturalistic, process-oriented, iterative, and involve creating a learning model of design that works in a complex social setting. However it is the constant connection of interventions to theory, and the possible generation of new theories that separates these methods from action research (Barab & Squire, 2004). The design-based research approach assumes that the "value of a theory lies in its ability to produce changes in the world" (Barab & Squire, 2004, p. 6). The paradigm evolved, according to Sandoval and Bell (2004), as a way to study

innovative learning environments in classroom settings. The theory of design-based research evolved from the work of educational psychologists and researchers involved in educational technology learning, who were concerned about bridging the gap between experimentation in laboratory studies and the messiness of the classroom (Bannan-Ritland, 2003; Barab & Squire, 2004; Brown, 2004; Collins, 1992; Design - Based Research Collective, 2003; Hoadley, 2004; Kelly, 2003; McKenny, Nieveen, & van den Akker, 2006; Reeves, 2000).

Structure of the Thesis

This thesis has been written according to the compilation format approved by the University of Wollongong. It includes chapters that have been previously published as journal articles. Each of the articles in this compilation addresses one or more of Vygotsky's key concepts in the context of the singing course. It should be noted that due to the nature of journal article writing there has had to be some repetition of information especially in regard to methodology. The Thesis contains four published articles. Each of the manuscripts was submitted to a journal and subjected to blind peer review process. Suggestions from reviewers were useful for making changes to the next iteration of the design and one of the outcomes of submitting to international journals was that a panel of international experts coincidentally informed the design of the model. Each of the manuscripts begins with a literature review relevant to the paper. The section relating to methodology has been written in traditional chapter format. The following paragraphs give a summary of the rest of the thesis.

Chapter 2

Methodology

The phases and methods of design-based research methodology were used to develop a model of singing underpinned by socio-cultural theory. This chapter describes the phases involved in design-based research methodology and the variety of instruments and methods used to collect and analyse data. The methods included the researcher/practitioner being in the same setting over a long period of time and using iterative cycles of design, enactment, analysis and redesign with each university semester to improve the design. The methodology demanded contextually dependent interventions, which were made in collaboration with the students in the authentic setting of the singing class. Documentation of the process of knowledge development is a vital part of the methodology and assists with informing other practitioners

Chapter 3

Article published as: Latukefu, L. (2009). Peer learning and reflection: strategies developed by vocal students in a transforming tertiary setting. International Journal of Music Education, 27 (2), 124-137

The analysis of reflection and peer learning in the pedagogical environment is the focus of this article. The results of the study suggest that there is value in peer learning for both classical and non-classical singers at an undergraduate level. In particular the data from the student journals in the present study also suggest that if the environment is arranged in such a way that peer learning is encouraged and purposely mediated, singing students find this extremely helpful as a learning strategy. ZPD in particular is discussed in the context of a student listening to other students, who were at a similar level but a little more advanced, and how exposure to more advanced students helped one student hear things she felt were achievable goals. The manuscript demonstrates how students use reflection as a way to solve problems and plan future actions as well as being both the subjects and objects of their own behaviour.

Chapter 4

Article published as: Latukefu, L. (2007). The constructed voice: a socio-cultural model of learning for undergraduate singers. Australian Voice, 13 8-15

This article begins with an overview of literature related to the study. This includes research in music education and voice science as well as studies that have been carried out in other fields such as spoken voice, physical education and dance. It was important to draw on research from other disciplines that were already incorporating some of the notions of socio-cultural theory because there was very little written in the area of socio-cultural theory and learning signing. The article goes on to discuss the pilot study that was conducted in 2005 and how it informed the main study. It drew on data collected from reflective journals written by students as well as the findings from the pilot study. The aim of the pilot study was to examine the response of students to a changing curriculum in which traditional 'bel canto' singing technique was taught in conjunction with spoken voice class. The pilot study was presented by Latukefu and Nicholls-Gidley at the 7th Voice Symposium of Australia held in September of 2005 and provided the basis for further research by Latukefu into strategies students used to construct learning.

Chapter 5

Article accepted for publication as: Latukefu, L. (2010). Peer assessment in tertiary level singing: changing and shaping culture through social interaction. Research Studies in Music Education, 32(2) (in press)

The effect that changing the role of the actor/singer in an assessment has on the group is investigated in this article. It also analyses the individual development of graduate qualities such as critical thinking and responsibility in students who have completed peer assessment. The article looked at the process involved to integrate peer assessment into the singing subject and what kind of support was needed to achieve this. Results suggested that students saw themselves as agents of their own

assessment activities by taking control of assessment and that having to think critically about other student performances made them reflect on how effective their own performances were.

Chapter 6

Article accepted for publication as Latukefu, L. & Verenikina, I. (2011). Scientific concepts: Do they belong in a student toolbox of learning? *British Journal of Music Education*

This article illustrates that certain vocal techniques require a mingling of spontaneous and scientific concepts in order for students to make meaning of what they are learning. The study suggests that scientific concepts of singing could become part of the students' toolbox that helps develop their singing by making meaning of what they are experiencing kinaesthetically and aurally while they sing. Students' acquisition of scientific concepts of singing affected both their singing performance and their ability to learn in a positive way. This article is co-authored with one of the supervisors who contributed to it by positioning the research in a broader view of teaching and learning (approx. 20%).

Chapter 7

Conclusions, recommendations and future research

This chapter focuses on the implications of the research for practitioners and other future researchers, of socio-cultural theory in the teaching and learning of singing. It goes on to outline the design principles that emerged from the study and, discuss contributions made to the field. Finally it considers future research questions that now need further investigation as a result of the present study.

Summary of the Chapter

This chapter begins by setting the scene in which contemporary Australian tertiary music education finds itself in 2010. It is one of budget cuts and pressure to

increase student-to-staff ratios. The chapter goes on to demonstrate that this sort of pressure initiated the present study. An initial review of literature pertaining to studies that developed alternative methods of teaching singing, did not uncover a large body of work in this area and so the chapter lays out the purpose of the research, which was to develop knowledge about how students learn singing in an environment transformed by socio-cultural theories. This knowledge can be used in practice and also to inform other practitioners.

Chapter 2 METHODOLOGY

Introduction

This research used a design-based research approach, which guided the study in designing the learning environment and the reflection on its effectiveness. Design-based research addresses theoretical questions about the nature of learning in context, approaches to the study of learning phenomena in real situations and the need to derive research findings from formative evaluation (Collins et al., 2004). Improving educational practice, designing a learning environment and at the same time developing learning theories in the real situation of the singing course was central to the present study and justified taking a design-research approach (DBRC, 2003). The added step of developing learning theories through constant reflection on a theoretical framework differentiates design-based research different from action-research. As is often the case in qualitative research, focus was given to a smaller number of cases, and moved from a description of what a participant's experience was and what meaning participants made of the experience, to an interpretation of the data in order to explain why it was the case (Hitchcock & Hughes, 1995; Trahar, 2006). In Design-based research methodology iterative cycles of development, implementation and study allow the course designer to gather information that may lead to a better design. "Models of successful innovation can be generated through such work — models, rather than particular artifacts or programs, are the goal" (DBRC, 2003, p.7).

The purpose of using theory-driven design, as proposed by design-based research methodology for the present study, was to develop educational principles, based on empirical evidence of how students learn singing in a skills-based, tertiary performance course. In this case, the study utilised Vygotskian notions described in chapter 1, in the design of the curriculum. These socio-cultural theories were incorporated into the design of a singing class environment that encouraged self-regulated learners who learn from social interaction with each other. Design

principles offer guidelines in which the initiative should first emphasize what is to be learned, via mutual implementation, between the developers and the teachers and students, because of theoretical arguments and empirical arguments (van den Akker, 1999, in Mckenny, Nieveen & van den Akker, 2006).

Scientific research in singing often focuses on isolated bio-mechanical or acoustical problems that are tested within laboratory contexts and which, while adding to the body of knowledge about how the voice works do not take into account the holistic nature of singing. In terms of learning and cognition this laboratory approach cannot provide an understanding of the richness of the class or studio context in which students are constructing learning. At the beginning of the present study, I considered carrying out an ethnographic study of the students and the environment however, as Barab and Squire (2004) point out teachers often have transformative agendas and it is not enough to simply observe. I wanted to be able to teach my students how to sing without compromising the level of excellence required in all areas, even though the context in which I was teaching had changed dramatically. In order to do this I had to move beyond simply observing how they coped in the changed environment, to making up conjectured theories on the kinds of learning activities that might assist them and then testing these theories in the local context of the classroom (Barab & Squire, 2004; K. Gravemeijer & Cobb, 2006).

Central to an approach designed to capture the developmental nature of the pedagogical project, was flexibility of the design, multiple dependent variables such as changes of staff and emerging phenomena which led to different directions, and capturing social interaction (DBRC, 2003). Participants were not subjected to experimentation, but co-participants in the design and analysis (Barab & Squire, 2004).

This chapter begins with a description of the participants and the different phases involved in design-based research methodology and how it was adapted for the present research. It goes on to describe methods used to collect and analyse data and finally it addresses the limitations of the research including ethical considerations.

Participants

There were three different cohorts of students who took part in the research. The first cohort commenced in 2006, the second cohort in 2007 and the last in 2008. The total number of participants who began the study was 108 however, during the three years that the study was undertaken, some students dropped out of the course so the numbers fluctuated to around 90.

The participants in the study were three different cohorts of students who were studying singing skills as part of their Bachelor of Creative Arts (see Table 1). Each cohort continued in the study throughout the period of their full enrolment, which was three years, although with the last cohort only two years of data were collected. Students were recruited on a voluntary basis and could withdraw their consent at any time. All students in the cohorts gave consent to participate in the study and while there was a natural attrition due to dropping out of University, the students participated in the investigation for the entire period of their enrolment. They were a mixed group of acting students, male and female and some had prior singing training while others had not.

Table 1: Participants numbers, gender and prior singing experience

Cohort #	Males	Females	Prior singing experience	Number retained
Cohort 1	16	29	15	39

Cohort 2	14	19	11	25
Cohort 3	15	15	15	27

Case studies were chosen using a model developed in a study carried out in the UK looking at the learning processes of two experienced musicians. Holmes (2005) found from earlier studies that the most fruitful source of data was the players' descriptions of their own working practices. This meant it was important for them to have a high level of meta-cognition and meta-perception and be articulate in their explanations. The case study participants were chosen because they were able to articulate how their singing was developing and why. They wrote regularly in their reflective journals and attended class regularly. The focus group in the study on peer assessment were six students chosen using purposive sampling to ensure that both genders, indigenous and international students were represented in the sample. The rest of the students in the course gave consent to take part in the implementation and evaluation of the exercise.

In chapter 1, I described my own role in the research as the teacher who carried out the pedagogical interventions and assessed the students, the course designer who framed the socio-cultural context for the study and the researcher who interacted with the participants and generated field notes as well as keeping a reflective teaching journal through the process. Design-based research provides opportunities for the exchange of expertise across disciplinary boundaries, which can lead to insights about the phenomena under study (Barab & Kirshner, 2001; Cobb, 2001; Edelson, 2002 in DBRC, 2003). In the present study the close collaboration of the singing teacher and spoken voice teacher led to insights into how students should take more responsibility for their own learning and this in turn led to different strategies being tested in the teaching and learning setting. Another

partnership which arose from the design-based research methodology was that between the researcher and the Education Faculty's Vygotskian scholar. The exchange of ideas on the theoretical framework and how to adapt it to a higher education singing setting became the basis of one of the papers (see chapter 6) included in this compilation.

Research Design

> *…the design based researcher, to treat enacted interventions as an outcome, often documents what has been designed, the rationale for this design, and the changing understanding over time of both implementers and researchers of how a particular enactment embodies or does not embody the hypothesis that is to be tested. This leads to a broad documentation of the intervention (to catch all relevant, but unanticipated, consequences of the design on the enactment). (Hoadley, 2004, p. 204)*

This study used design-based research methodology to carry out the qualitative research. There are many different permutations of design-based research methodology (Bannan-Ritland, 2003; Barab & Squire, 2004; Design-Based Research Collective, 2003; K. Gravemeijer & Cobb, 2006; Lenski, 2001; McKenny, Nieveen, & van den Akker, 2006; Reeves, 2000; van den Akker, 1999). The present study adopted and adapted the approach as suggested by Gravemeijer and Cobb (2006) and Reeves (2000) in order to develop a model that suited this particular context.

Reeves (2000) mapped out steps to be followed in order to carry out development research (an earlier permutation of design-based research). These steps (see Fig.1) were followed closely in the present study. They involved

beginning with a literature and document review to understand the field, then developing interventions underpinned by Vygotskian theory. These interventions were tested in the authentic classroom situation and then changes were made and the interventions were carried out again. The iterative nature of design-based research methodology combined with the cyclic nature of university sessions was particularly suitable.

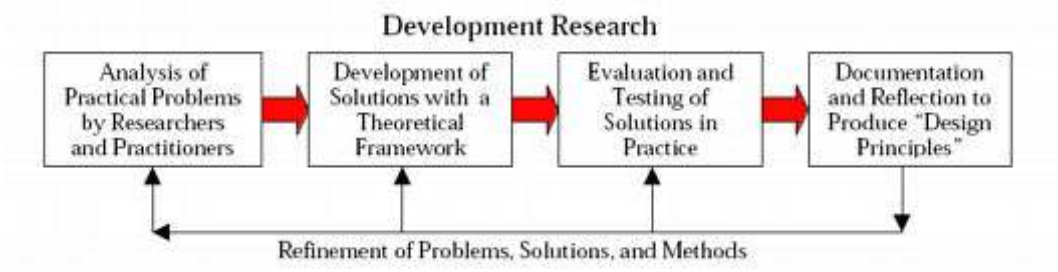

Figure 1: Development approach to IT research (Reeves, 2000, p. 9)

A summary of how the present study transformed Reeves (2000) model into different phases can be found in Table 2.

Table 2: Summary of design-based research methodology phases as used in this study

Year	Intervention	Purpose
2005	PILOT STUDY	Investigate student reaction to being taught both singing and spoken voice as part of performer training. Results of the pilot study, which appear in chapter 4 of the compilation, prompted the larger study. Questions that arose from the pilot study regarding strategies that students were employing in their singing and spoken voice classes were the basis for the central research question of the present study.
2006	PHASE 1: PEDAGOGICAL GOALS	

	Review of context and history. This includes conventional methods of teaching singing, historical method of teaching singing at UOW and changes that may have occurred in the typical end-user.	Gain an understanding of how singing had developed and changed in the course up until the present study.
	Formulation of theory and theoretical principles and literature review	Analyse practical problems and develop solutions using a Vygotskian theoretical framework.
	Design of classroom environment	To encourage social interaction amongst students in class.
2006	**PHASE 2: ENACTMENT OF DESIGN AND DATA COLLECTION AND ANALYSIS**	
	Introduction of reflective journals to students	To encourage critical thinking and informal self-assessment.
	Documentation and reflection of classroom design in collaboration with participants. Collection of data, data analysis and theoretical development	To refine the classroom design and refine solutions for the next iteration
2006	Formal introduction of scientific concepts into the spoken voice and singing voice course.	To encourage students to self-regulate their own singing when they understand how their voice works scientifically in relation to their bodies.

	Documentation and reflection of classroom design and reflective journal in collaboration with participants. Collection of data, data analysis and theoretical development	To refine solutions for the next iteration
2008	Formal introduction of peer assessment.	To encourage students to be able to judge quality in singing and foster a sense of responsibility for others.
	Documentation and reflection of classroom design and reflective journal in collaboration with participants. Collection of Data, data analysis and theoretical development	To refine solutions for the next iteration
2009	**PHASE 3: FINAL ANALYSIS OF COMPLETED DATA AND EMERGENCE OF DESIGN PRINCIPLES**	
	Continued evaluation and testing of solutions in practice. Documentation and reflection on the evaluations.	Produce design principles

Phase 1

Pedagogical Goals and design of model

The first phase in the investigation was to formulate what Gravemeijer and Cobb (2006) describe as the local instruction theory. This included the possible learning

process and the possible means of supporting the learning process such as the classroom culture and the interaction between the students and teacher. Pedagogical goals were to deliver skills and knowledge to undergraduate singers without any compromise to how well the students could learn to sing. The amalgamation between drama and music meant that the number of students in each year was substantially larger than previously. Instead of teaching 12 singing students in a weekly individual lesson and two master classes per week, there were now several classes each containing 10-12 students. The flexible interaction between teacher and student in the former one-to-one lessons was no longer possible. This led to identifying pedagogical goals and student qualities such as critical thinking, independent learning, problem solving and responsibility, which would help students to cope with the changed environment. The initiatives that were enacted in order to achieve the pedagogical goals were the use of reflection and the introduction of scientific concepts, peer assessment and the design of the classroom environment, which included a much greater influence of peer learning.

Context and History

A snapshot of the UOW singing course in 1998 compared to 2007 shows the development in the course. From 1998 until 2002 students studying singing followed a traditional music course path, which included Harmony and Analysis, Music History, Aural and Keyboard skills, Music Project which was either a concert or performance of an opera, Music Skills (a choral project) and Music performance. Music history provided a general survey of Western art music. Music performance was the subject in which students were given their individual singing lessons. In first year this was a one-hour lesson with the teacher. There was also a three- hour performance seminar each week and students performed twice in the session. These two performances contributed to 30% of the session mark and

the other 70% of the mark was a 10-15 minute presentation of songs in a closed exam with a panel of three staff as markers.

There were two singing teachers in the department and we worked one-to-one with individual students. The teacher chose the repertoire and the underlying philosophy was that we were working with individual differences and it was not practical to write a 'one size fits all' course and then stick to it. The individual lessons needed to be organic and flexible so that the teacher could concentrate on whatever needed to be tackled. Over the years between 1998 and 2002 we did only one full theatre production with the students and a few concerts. We had a few excellent students and would encourage them to do concerts outside of the course, but within the course there were not a lot of opportunities to perform in public.

A choral project in music skills provided students with choral performing experience and gave them experience of collaborative music making. Aural and keyboard skills were studied separately and consisted of dictation in pitch, rhythm and harmony, sight- singing using exercises and elementary keyboard skills to familiarise students with locating notes, intervals and chords in upper and lower registers. In 2000 a mid-session exam of performing one song was introduced to take some of the pressure off the end of session exam.

In 2002 singing was relocated to theatre and became part of a subject teaching performance skills. In the previous music course singing had been considered the primary major of the student, but now it was part of a course in which performance was considered the major. The other singing teacher left and the placing of singing into skills was done in consultation with the Head of Performance. The other four components in the skills subject are movement, spoken voice, character analysis and production. In spoken voice class, students acquire knowledge of the International Phonetic Alphabet (IPA), skills in transcription, vocal skills including tone onsets, control of resonance, articulation

and loud voicing technique. They also develop skills in accent reproduction, text mapping and performance of emotional text. In movement students establish awareness through formal experiential explorations of functional anatomy as well as exploring movement with the voice. All students study character analysis based on the work of Yat Malmgren (Hayes, 2008) in which they examine a range of archetypal characters that encompass the Malmgren personas or Inner Attitudes; Near, Mobile, Adream, Awake, Stable and Remote. In singing class students apply vocal skills learnt in spoken voice and singing to Vaccai (1832) technical exercises. They partake in an ensemble class where they sing choral works or small ensembles and at the end of session they perform solo songs in class.

Design of interventions and classroom environment

The main purpose of the interventions was to encourage students to take more responsibility for their own learning of singing and move toward the goal of self regulated learning. Therefore reflection, peer learning and assessment, transformation of spontaneous concepts to scientific concepts, authentic assessment and a change in the dialogue encouraged in class were the focus of activities and changes to the classroom environment.

The instructional initiatives and the transformation of the classroom environment were constructed collaboratively over 5 years in consultation with other staff members and used the reflective journals that students wrote during that time as a way of refining and changing the design. This was achieved by collecting and analyzing all reflective journals for recurring themes, which were then taken into account and incorporated into the design of the next iteration. Also influencing the design was student feedback from teacher surveys conducted every session, focus groups with students and consultation with lecturers from the Education Faculty on aspects pertaining to the theoretical framework.

Reflection and introduction of scientific concepts

The goal of an emancipatory learning model is for the learners to take control of their own learning. This goal is underpinned by an educated reflexivity (Fisher, 2003). In the first session of first year students learned how to write a reflective journal by following reflective scaffolding, developed by the Centre for Educational Development and Interactive Resources at the University of Wollongong. The students kept a weekly journal and wrote reflections using CARLT. This stands for; Context, Action, Response, Learning and Transference. The assessment criteria were based on whether or not they used CARLT for reflections, whether they were able to articulate which singing skills had developed and which had not and why, whether they showed a linkage from their theory to their practice and whether they had made any attempt to transfer skills they had learnt in other classes to their singing. After a university session (13 weeks) of writing weekly using the CARLT scaffolding, the students were only required to write a reflective essay at mid-session in which they developed strategies to help improve their singing. They were asked to answer the following questions in order to help them reflect:

- *How has my singing developed since the beginning of session, what needs to improve?*
- *What strategies do I need to develop and practice to improve?*
- *What else have I read about singing or voice and how can I apply it to my own practice? Have I referenced this and do I have a bibliography?*
- *How have I tried to transfer any of my developing vocal skills to other situations, what happened?*

At the end of each session they reflected on whether the strategy has worked and refined or changed the strategy in order to improve further. Again they were provided with a set of questions to answer, which encouraged them to think about how they were developing and what they could do to keep improving:

- *How has my singing developed since my last reflection?*
- *How effective were the strategies I developed in the last reflection?*
- *How can I improve or change these strategies?*
- *What else have I read about singing or voice and how can I apply it to my own practice? Have I referenced this and do I have a bibliography?*
- *How have I tried to transfer my developing vocal skills to other situations, what happened?*

Students are assessed on the reflective statement. They email their reflective statements to the lecturer and tracking changes are used to make extensive notes to each student on how they could improve their reflections or to comment on the effectiveness of the strategies they are proposing and some possible refinements.

The employment of a spoken voice teacher who was also a lecturer in speech pathology meant the introduction of a technique which, focused on action at the laryngeal level (Mitchell, Kenny, Ryan, & Davis, 2003) and followed a developmental pathway. This meant, students could work at their own level and still follow the pathway given to them in class. While she did not follow a specific method, her teaching was influenced by Estill (1996), Bagnall (2005) and Kayes (2004). As well as these vocal techniques students were also introduced to work on mapping the body (Conable, 2000). The spoken voice teacher convinced me that at least at an undergraduate level there were basic concepts that would be helpful to all students in order to release constriction and so these methods and the professional language associated with the methods were incorporated into the singing class. By learning the anatomy and physiology of the vocal apparatus and the muscles that are needed to develop good singing through body mapping and constantly reflecting from theory to practice, the conjecture was that students would begin to develop a deep understanding of the general concepts of singing that could be applied to any new song. They would no longer rely on their own spontaneous concepts developed through trial and error and which may have had very little scientific basis.

As well as acquiring scientific concepts concerning vocal technique, students were required in every class and with every new vocal exercise, to discuss the musical form of the exercise or song. Knowledge about key signatures, rhythm and melody and how they work was reviewed. The purpose of this is to integrate musicianship and aural skills into the authentic environment of singing and not separate theory from practice.

Peer assessment

In the previous music course students were marked by a panel of three teachers who used their expertise to make a judgment about the standard of a student's work. While this gives an objective perspective to students, it does not provide the opportunity to develop their own skills in informed critical appraisal, which are necessary as performers, teachers, arts administrators and directors. This intervention was designed to give students an opportunity to develop assessment criteria, which they then used to judge their peers.

The pedagogical objectives of this initiative were to encourage students to develop graduate qualities such as critical thinking, communication and responsibility. I hoped to encourage students to be informed and responsible in their preparation, in order to carry out the best possible assessment of their peers. My conjecture was that if the students themselves developed the assessment criteria in the form of a rubric, which was user friendly, they might take it more seriously. In second session of the year the rubric was implemented and an evaluative questionnaire carried out to assess student reaction to the initiative. Refinements were made according to student suggestions.

Classroom Environment and Peer learning

The amalgamation at UOW made it necessary to think about the classroom environment in a way that had not been necessary with the traditional one-to-one

singing lessons. As part of the transforming environment a pattern was established in class, of learning a vocal exercise as a group and then each student having a chance to sing the exercise on their own. As the students progressed into second and third year the vocal exercises became more demanding, requiring them to have acquired fine motor skills in their vocal apparatus and an increased range. The amount of feedback from the lecturer was decreased and instead the class was encouraged to work through problems with the lecturer only stepping in if they could not do so. Throughout the three years that they studied singing, the importance of taking responsibility for their own learning was stressed.

In the first half of first year the class concentrated on applying vocal technique to vocal exercises and an ensemble piece, but in the second half of the year students learn solo and ensemble repertoire. The other students in class comment on the performance, taking into account not just vocal technique, but also interpretation and communication. Students were encouraged to take part in dialogue that would help solve vocal issues that might arise in the course of the class. For example the group would sing the vocal exercise and were then asked whether anyone experienced problems with the exercise that they would like to discuss. Next an individual was invited to sing the same exercise to the class and the class would comment on the performance. If no one had anything to say prompts were used by the lecturer such as, “how could J improve what he just sang?” The prompts used were important in this process and so was allowing time for the group to discuss what they heard and how they thought things could improve.

By 2007 the design of the course had been refined and the assessment arranged to try and more authentically capture the skills that the students were being taught. More effort was made to giving immediate feedback after assessments were done and a progressive mark allocated by the teacher based on

how vocally and musically prepared students are for each class. After the in-class singing assessment students receive immediate feedback on their performance in the form of an assessment rubric designed in consultation with students. In week 6 of each 13 week session, all singing students do a mid-session assessment. Finally for the progressive mark brief notes are kept of students who arrive vocally prepared and ready to work and those who consistently arrive late or are unprepared vocally and musically. Explanations are given to students as to why they received a poor or good mark.

Aural and music theory had always been taught separately in every conservatoire that I had ever attended and often at a level much more difficult than I could understand. There was not much scaffolding to help and often a rather scornful attitude to the lack of aural and musicianship skills evident in many singers. A professional singing colleague who had attended the same conservatoire as I had, summed it up when he said:

> We would walk into aural class having come to music and singing at the ripe old age of 16 or 17 years. In the class would be string players and pianists who had all been playing their instruments since they were 4 years old. The singers would sit with looks of absolute terror through the class and then at the end of the dictation the lecturer would tell you, you had failed, but you would just turn up the next week and do it all again.
>
> (Personal communication)

In the design of the present study sight singing is incorporated into the authentic task of learning to sing a piece of music. The students were encouraged to work together in order to solve musical problems. Dialogue generated by group problem solving and reflection was encouraged by the teacher as a way of encouraging

students to solve problems themselves. The role of the teacher in this case was to keep checking that everybody understood before moving on to the next problem.

Phase 2

Enactment of Design and Data Collection

Each University session, which comprises 13 weeks of teaching and 2 weeks of exams, was considered an iteration of the cycle of development. The students were involved in the process of development because themes emerging from their journals contributed to changes in the course. For example, many of them mentioned that they needed more singing time during the week and that they felt that more ensemble singing and musicianship would be helpful to them. This meant that in 2007 an extra hour a week was added to general singing and that extra hour became an ensemble singing workshop. Comments from students in journals about their need for more sight-singing and music theory meant that sight singing and musicianship were embedded into the main singing class.

A variety of instruments were used to collect data. The study addressed issues of trustworthiness of data through triangulation of data types (documents, subject evaluations, student journals, teacher journals and focus groups) and participant perspectives (teacher, three cohorts of students and other staff). Table 3 describes each of these instruments, its purpose and how the data were collected. Reliability came from the data being analysed and cross-checked continuously and recurring themes being tabulated so that there was a double or triple checking of results at all times.

The instruments used in the local evaluation stage consisted student reflective journals, questionnaires, focus groups, input from other staff members and teacher and subject evaluations administered by the University. The questionnaires contained opened and closed questions as well as Likert scales and

the teacher/ subject evaluations were administered anonymously by the University as part of their own regular evaluations and the results provided to me at the end of each session. Teacher evaluations carried out at the end of each session were a major influence on refinements that were made to the model. The anonymous nature of the evaluations meant that students were honest about what was or was not working from their perspective. The input from other staff members came in the form of discussions in meetings about the subject development however it was left to the teacher to design and implement curriculum. A pilot study carried out in 2005 and reported on in chapter 4, became the basis for the development of research questions for the present study and also the methods learnt by the researcher in the analysis of data for the pilot study were put into use in the main study. The strength of a compilation thesis is that by submitting manuscripts to international journals there was an opportunity to have rigorous peer review of my interpretations and methodology. I took full advantage of this and all of the reported studies in the present study have undergone peer review by international experts thus leading to further changes both to the design and the way the research was carried out.

Teacher/Designer/Researcher

Given the qualitative nature of the research and my own multiple roles in the study it is important to acknowledge the way that I negotiated these multiple roles in the research setting. One of the potential shortcomings of design-based research is that in order to document developments and changes in learners it is important to go through a number of iterations over a long period of time. This is often not practical for researchers and teachers, however in the present case because I was both researcher and teacher I was able to sustain my involvement with the students for the entire period of the project. It gave me the opportunity to monitor students'

individual development throughout their time in the course and this also assisted with designing a course that would follow a developmental pathway. I analysed and cross-checked the data I was collecting continuously and then reflected back to Vygotskian theory as a means to understand my own work and that of my students so there was a constant cycle of teaching, evaluating and then reflecting. In my own journal I wrote about individual students and how effective I thought the design was and then cross-referenced this with the perspectives provided by the students in their own journals and also the anonymous teacher and subject evaluations that they filled out.

Table 3: Instruments used to collect data

Instrument	Purpose of instrument	How data was collected
Student and teacher reflective journals	To gain an understanding of undergraduate singing students' perceptions of and interpretations of their bodily and singing experiences and the meanings, which they assigned them as well as the changes that happened. To add teacher perceptions and interpretations of the same experiences.	The journals were collected twice in a session from January 2006 till November 2009. Two full cohorts of students were involved in the collection and all gave permission for their reflections to be analysed.
Teacher's notes taken in class of student assessments and performances	To keep a record of ongoing vocal development in order to compare teacher perceptions with students' perceptions of the same time.	Detailed notes of students' performances and assessments were collected for analysis twice per session.
Teacher/Subject evaluations	These were anonymous and therefore students could write freely and with honesty about the performance of the teacher and the course.	University administered evaluations at the end of each session, with results provided to the teacher. Questions used Likert scales as well as open ended questions for comment by students

Document Reviews	Documents provided a context for the model being developed.	Documents included subject outlines from 2000 until 2007 as well as comparison of courses teaching music or drama around Australia
Planning meetings with other staff members	Used to reflect on and assess the progress of students and plan content of classes. Also to seek advice on matters pertaining to the theoretical framework.	Held at the beginning and end of the university session.
Questionnaires	To find out music education background and any existing vocal problems as well as what students found useful about the innovations and any suggestions they had for improving them or dropping them	Administered at the beginning of the study and at the end of the reflective journals and peer assessment projects.
Focus groups	The groups were used to collaborate with students on the development of descriptors of quality that could be used in peer assessment	Discussions in focus groups were recorded and analysed.
Pilot study and pilot interviews	These informed the research questions being investigated in the present study and assisted with the final wording of interview questions in the main study	Carried out at the beginning of the study
Submission of manuscripts to international and national peer reviewed journals.	The critical feedback from reviewers shaped both the manuscripts and the next iteration of the design.	Each research project was documented and submitted for publication. Comments from reviewers were used to inform changes in the design.

Phase 3

Analysis of completed data collection and emergence of design principles

Symbolic interaction, a phrase coined by Herbert Blumer (1969) is an approach to the study of human group life and conduct, which relies on three basic premises.

The first is that human beings act towards things on the basis of the meanings the things have for them. In a singing class this would include the other students, the teacher and even the guiding ideals such as good vocal health and technique, communication and great singing. The second premise is that the meaning of such things is derived from social interaction that one has with others. In the case of the singing class it is the constant interaction and collaboration between the teacher and students that fosters the understanding. The third premise is that these meanings are modified through an interpretative process used by the actor in dealing with the things he or she comes across.

> On the methodological or research side the study of action would have to be made from the position of the actor. Since action is forged by the actor out of what he perceives, interprets, and judges, one would have to see the operating situation as the actor sees it, perceive objects as the actor perceives them, ascertain their meaning in terms of the meaning they have for the actor, and follow the actor's line of conduct as the actor organised it- in short, one would have to take the role of the actor and see his world from his stand-point. (Blumer, 1969, pp. 73-74)

When the students at UOW write in their reflective journals about how their singing is developing they are interpreting and modifying the meaning of things that are happening to themselves (Blumer, 1969). The ontological standpoint of the present study is that it is important to understand students' perceptions and interpretations of their bodily and singing experiences and the meanings that they assign them.

This study used Interpretative Phenomenological Analysis (IPA) to arrange and analyse the data. IPA has its origins in health psychology (Fade, 2004) however it has been adapted and used in music research (Bailey & Davidson, 2005;

Coimbra, Davidson, & Kokotsaki, 2001; Davidson & Borthwick, 2002; Holmes, 2005; Sansom, 2005). It investigates the participant's experience from his or her own perspective however it recognises that this investigation must include the researcher's own view of the world as well as the nature of the interaction between researcher and participant. It is therefore an interpretation by the researcher of the participant's experience while at the same time an attempt to capture the quality and texture of the individual experience (Willig, 2001). IPA studies involve a detailed case-by-case analysis, with the primary aim being to examine in detail the perceptions and understandings of the specific group studied rather than making more general claims (Chapman & Smith, 2002). The aim of the present study however is not simply to understand the participants' experience of learning singing, but to draw broader and more general claims about the kinds of strategies students develop in a social constructivist environment. By interpreting the data through constant reflection on the theories of social constructivism it is possible to evolve explanations from the data in the forms of models or narrative (Chapman & Smith, 2002).

Data analysis through interpretative phenomenological analysis

Interpretative phenomenological analysis (IPA) has particular relevance to health psychology because of the increasing recognition of the constructed nature of illness (Brocki & Wearden, 2006). In a similar way the present study recognises the constructed nature of singing. "IPA allows us to explore these subjective experiences, and helps us to describe and understand the respondent's account of the processes by which they make sense of their experiences" (Brocki & Wearden, 2006, p.88). There is a flexibility attached to IPA that allows the use of pre-existing theoretical frameworks and so the use of socio-cultural theories as a framework for interpreting participants' accounts is acceptable as long as the researcher's position

is made clear. This flexibility also means theories can be developed for the shared meanings that a group of individuals attach to the experience of developing their singing in a socio-cultural environment and a case study approach can be used to develop an in-depth description of just one individual's experience (Fade, 2004). For example, the content of all the reflective journals was analysed individually and common themes emerging were noted and used to develop shared meanings for the group. Journals were also analysed looking at individual development of students over the three years in the course. This singing development, which included identity construction, was documented and used for case studies. Smith (1999) used diaries in conjunction with interview data as the main source for his case studies of women undergoing the transition to motherhood. The diaries were collected at regular intervals and provided an excellent alternative to providing a narrative account for analysis (Brocki & Wearden, 2006).

In the present study journals were collected at mid-session and at the end of each session. In the first stage of analysis journals were read and initial observations made in response to the text. Any statements made by students at this stage that were thought to be relevant to the research were highlighted to be looked at again later. On a second read through of the text, labels were written next to the highlighted text representing the general idea of what was represented by the text so for example, themes emerged regarding vocal techniques, class size, fear of singing, habits. Next the highlighted texts were gathered together under their different titles and then those themes were grouped under umbrella themes that summarised and captured the quality of the participants' experience of the development of their singing while at the same time reflecting back to the socio-cultural theories of Vygotsky. Finally the cases were integrated in order to obtain a more generalized understanding of the entire group as well as the individual case studies. The process of integration was carried out in a cyclic manner by constantly

adding to themes when journals were handed in. Some themes that had looked as if they might be important at the beginning turned out to be not as important or were never mentioned again so they were not retained. The themes were arranged in alphabetical order and the individual participant's code and the date on which the text was written, was recorded next to the text. This meant that over the three years it was possible to track individual cases that showed interesting development.

The standpoint of the researcher is important to acknowledge as being part of the final interpretation in the same way that as a teacher I am not simply an observer, but a co-participant in the development of the model and also the research. This is what Smith, Jarman and Osborne (1997 cited in Weed, 2005) describe as the double hermeneutic of interpretative activity. It begins in the case of this study with the student interpreting his or her own experience of learning singing and then the researcher interpreting the experience of the participant (Weed, 2005) in the context of the socio-cultural environment that is being developed.

> Interpretative Phenomenological Analysis starts from the assumption that people's accounts tell us something about their private thoughts and feelings, and that these, in turn, are implicated in people's experiences……IPA recognises that the meanings people ascribe to events are the product of interactions between actors in the social world. This means that people's interpretations are not entirely idiosyncratic and free floating; instead, they are bound up with social interactions and processes that are shared between social actors (Willig, 2001, pp. 66-67).

The students involved in case studies were all given an opportunity to check the transcripts before they were published and the focus groups checked and agreed with interpretations and transcripts of the focus group sessions. Triangulation of data types was achieved by the constant cross-referencing between data types mentioned earlier in the chapter and participant perspectives.

Finally certain design principles emerged from the study. These principles are described in detail at the conclusion of the study.

Ethics

Ethics approval was sought with each of the interventions. Permission was sought to collect student journals for later analysis and recruit students to participate in focus groups and surveys. Participants were given assurance that their participation in the research was voluntary and that any analysis of journals would be made after assessment had been completed. They were also provided with full details of the study and the commitment that would be expected of them (see appendix 3).

Summary of the Chapter

This chapter began with a description of the participants and data collection as well as giving a rationale for the use of each method. It then revealed how design-based research methodology was most appropriate for the study. These phases had been adopted and adapted in what Gravemeijer (1994) refers to as "theory guided bricolage". This bricolage was also evident in the adoption of Interpretative Phenomenological Analysis to analyse the data collected. Design-based research methodology uses conjectured theories on which to base the interventions. The methodology demands that solutions are developed with a theoretical framework (Reeves, 2000). Vygotsky provided a way to respond to this demand, in particular

his writings on scientific and everyday concepts and how children construct knowledge first inter-psychologically and then intra-psychologically.

Chapter 3
PEER LEARNING AND REFLECTION: STRATEGIES DEVELOPED BY VOCAL STUDENTS IN A TRANSFORMING TERTIARY SETTING

Article published as: Latukefu, L. (2009). Peer learning and reflection: strategies developed by vocal students in a transforming tertiary setting. International Journal of Music Education, 27 (2), 124-137

Abstract

The focus of this article is on the analysis of reflection and peer learning in the pedagogical environment. The research draws on findings from an Australian study, which aimed to develop and critically evaluate a model of vocal pedagogy influenced by socio-cultural theories. The model sought to position Vygotsky's theories in the environment of university-level vocal instruction. To capture the developmental nature of this pedagogical project, a design-based development research methodology was employed. Central to this approach was flexibility of the design, multiple dependent variables and capturing social interaction. The students were not the subject of experimentation, but were co-participants in the design and analysis. The results of the study suggest that there is value in peer learning for both classical and non-classical singers at an undergraduate level. In particular, the data from the student journals in the present study also suggests that if the environment is arranged in such a way that peer learning is encouraged and purposely mediated, singing students find this extremely helpful as a learning strategy.

Introduction

This article draws on findings from an Australian study, which aimed to develop and critically evaluate a model of vocal pedagogy influenced by socio-cultural theories. The model sought to position Vygotsky's theories into the environment of university-level vocal instruction.

The focus of this article is on the introduction of reflection and peer learning into the pedagogical environment. The main purpose of this initiative was to encourage students to take more control of their own learning of singing and move toward the goal of self-regulated learning, which is underpinned by an educated reflexivity (Fisher, 2003). Research referred to by Hallam (2001) that investigated the issues of enabling students to learn (Da Costa, 1999; Jorgenson, 1997; Nielsen, 1999), was unanimous in its view that training in conservatoires should be designed to develop reflective learning.

A Norwegian study carried out by Nielsen (2004) found that first-year music students in the music academy did not use fellow students to help and support each other with learning. She made recommendations that higher music education should take responsibility to create an environment that encourages this type of peer learning. The present study investigated the outcomes when a peer-learning environment was introduced in a regulated and organised way.

This research is built upon Vygotsky's theory, which describes the process of learning as co-construction of knowledge between the teacher and the learner or between learners, which later becomes internalised by the learner through a series of transformations.

> *An interpersonal process is transformed into an intrapersonal one.* Every function in the child's cultural development appears twice: first, on the social level, and later, on the individual level; first *between* people (*interpsychological*) and then *inside* the child (*intrapsychological*). (Vygotsky, 1978, p. 57)

The research used a qualitative approach where focus was given to a small number of in-depth cases, and moved from a description of what a participant's experience was and the meaning participants attributed to their experience to interpretation of the data by the researcher in order to attempt to explain why this was the case (Hitchcock & Hughes, 1995; Trahar, 2006). Students were asked to make reflective journal entries twice in a 13-week session over the three years. These data were collected and analysed.

In the first session of first year, students were briefed on how to write a reflective journal using CARLT (Context, Action, Response, Learning and Transference), a reflective tool developed by the University, and then asked to keep a weekly journal and write their reflections using this tool. The assessment criteria were based on the way that they used CARLT for reflections, whether they were able to articulate which singing skills had developed and which had not and why, whether they showed a linkage from their theory to their practice and whether they had made any attempt to transfer skills they had learnt in other classes to their singing. After one university session (13 weeks) during which they used CARLT, the students were only required to write a reflective essay at mid-session and end of session in which they developed strategies to help improve their singing. They were prompted by the following questions to help them reflect:

- How has my singing developed since the beginning of session? What needs to improve?
- What strategies do I need to develop and practice to improve?

- What have I read about singing or voice and how can I apply it to my own practice? Have I referenced this and do I have a bibliography?
- How have I tried to transfer any of my developing vocal skills to other situations? What happened?

At the end of each session they reflected on whether the strategy had worked and refined or changed the strategy in order to further improve. Again they were provided with a question guide, which encouraged them to think about how they were developing and what they could do to overcome any vocal issues.

There were 70 participants and all gave consent for their journals to be retained and analysed. Interpretative phenomenological analysis (IPA) was used for the analysis (Smith, 1999). IPA investigates the participant's experience from his or her own perspective. However, it recognises that this investigation must implicate the researcher's own view of the world, and is therefore an interpretation by the researcher of the participants' experience while at the same time an attempt to capture the quality and texture of the individual experience (Willig, 2001). IPA was first used in health psychology (Smith, 1999) and has also been adapted and used in music research (Davidson & Borthwick, 2002; Holmes, 2005; Sansom, 2005). IPA studies involve a detailed case-by-case analysis with the primary aim being to examine in detail, the perceptions and understandings of the specific group studied, rather than making more general claims (Chapman & Smith, 2002). In the first stage of analysis journals were read and initial observations made in response to the text. Any statements made by students at this stage that were thought to be relevant to the research were highlighted and examined again later. Highlighted texts were grouped under umbrella themes that summarised and captured the quality of the participants' insider experience of the development of their singing, while the researcher related these to the socio-cultural theoretical model.

Scientific research in singing often focuses on isolated biomechanical or acoustical problems, which are tested within laboratory contexts and which, while adding to the body of technical knowledge about how the voice works do not take into account the holistic nature of singing. In respect of learning and cognition, such a narrow laboratory approach cannot provide an understanding of the richness of the class setting or studio context in which students are constructing learning. Teachers have transformative agendas and it is not enough to simply observe. Instead, it is necessary to conjecture the kinds of learning activities that might assist students and then test these in the context of the classroom (Barab & Squire, 2004; K. Gravemeijer & Cobb, 2006).

To capture the developmental nature of this pedagogical project, a design-based development research methodology was employed (van den Akker, Gravemeijer, Mckenney, & Nieveen, 2006). Central to this approach was flexibility of the design, multiple dependent variables, and capturing social interaction. Participants were not subjected to experimentation, but were co-participants in the design and analysis (Barab & Squire, 2004).

Design of classroom environment: the context

In 2002, enrolment numbers into the traditional music performance course that existed at the university had dwindled. Rather than close down the course, a decision was made to amalgamate singing into the drama department. There had previously been very little collaboration with drama, and earlier attempts by the drama department to have someone teach singing had been resisted, as none of the teachers in the singing department were very interested in teaching classes of actors to sing. In fact, there was a lot of opposition to class teaching in case it meant a drop in standards. However, the amalgamation went ahead and instead of teaching individuals using the earlier format of the one-to-one lesson, the singing teachers were now expected to teach students in small groups. A key concept that

had to change for the new course design to become feasible, was the notion that every student needed an individually styled technique and that it was up to the teacher alone, to solve vocal difficulties that the student was experiencing.

The instructional design and transformation of the classroom environment was constructed collaboratively, in consultation with other staff, and used the reflective journals that students wrote during that time as a way of refining and changing the design. Also influencing the design was student feedback from surveys conducted every session and consultation with lecturers from the Education Faculty on aspects pertaining to the theoretical framework.

The employment of a spoken voice teacher who was also a lecturer in speech pathology meant the students gained an introduction to techniques, which focused on action at the laryngeal level (Mitchell, Kenny, Ryan, & Davis, 2003). These vocal techniques followed a developmental path that enabled students to work at their own level and still follow the path given to them in class. Vocal students learnt the anatomy and physiology of the vocal apparatus and the muscles needed to develop good singing through body mapping and constantly reflecting from theory to practice. The lecturer/researcher anticipated that students would begin to develop a deeper understanding of the general concepts of singing that could be applied to any new song.

Classroom environment and peer learning

The most difficult task in the development of this new environment was to challenge some of the established norms that had been part of the author's own training as an opera singer and were still being promulgated in conservatoriums around Australia. Nerland (2007) points out that the conservatoire is organised around the teaching of the principal instrument in a one-to-one situation. Not only that, but the traditions and historical practices that include how the repertoire is

performed, and even how much repertoire should be learnt all contribute to the "maintenance of particular cultural practices" (Nerland, 2007, p. 399).

The transformed singing course was divided into advanced singing for students with potential to study classical and operatic repertoire, and general singing for students who just wanted to learn singing as part of their actor training. As part of the new environment, a routine was established in class of learning a vocal exercise as a group and then each student singing the exercise on their own. The other students in the class then commented on the performance, taking into account not just vocal technique, but also interpretation and communication. One of the biggest challenges to accepted practice was the lesser importance which repertoire played in the learning of singing at an undergraduate level. Instead, vocal exercises were prominent in the class because all students, male or female, could learn these as a group. As the students progressed into second and third years, the vocal exercises became more demanding, requiring them to have acquired fine motor skills in their vocal apparatus and an increased range. The amount of feedback from the lecturer gradually decreased and instead the members of the class were encouraged to deal with problems themselves with the lecturer only assisting when required. Throughout the three years that they studied singing, the importance of taking responsibility for their own learning was constantly stressed.

If no one in class had any comment the lecturer prompted by asking, 'How could J improve what he just sang?' The teacher's prompts were important in this process, and so were allowing sufficient time for the group to discuss what they had heard and how they thought things could improve. Questions had to be exploratory and required the students to reflect, rather than simply answer yes or no. The development of this learning environment relied on research, (Zhukov, 2007) which suggested teachers must try to avoid asking questions that fall into

previously established patterns such as, ‘does that feel better?’, or ‘are you happier with that?’ to which students often reply automatically and without any reflection (Burwell, 2005).

Individual stories of vocal development

Four individual case studies of vocal development are presented here. They represent the different backgrounds of students being accepted into the performance course: those with previous singing and music training; those without previous singing or music training; those with some previous music training on an instrument; and those who were self-taught musicians. In all four cases, the students managed to achieve considerable vocal development over the three years in the course, regardless of their background. This development assisted the researcher in understanding key aspects of their developing skills in singing, which was another reason for choosing them to tell their stories. Those selected had also attended singing classes and wrote regularly in their reflective journals. The reflections in their journals were thoughtful and provided evidence of their own understanding of their transformation (Kiely, 2006).

These participant accounts of the strategies they used and how the created teaching environment affected their development provided an insider viewpoint. The reflections represent a view of the world from the students’ perspective while at the same time acknowledging that meaning is negotiated within a social context (Smith, 1995), and that what is written here is the researcher’s interpretation of this perspective. When the students write in their reflective journals about how their singing is developing they are interpreting and modifying the meaning of things that are happening to themselves (Blumer, 1969).

The participants were given pseudonyms, Cleo, Zana, Arielle and Pablo. Cleo had never had any prior musical or singing experience. She did not identify

herself as a singer and was not in the advanced singing class. Zana had previously studied piano, but not singing before she entered the course, so unlike Cleo, who was musically illiterate Zana possessed some musicianship and had studied a musical instrument. Zana had identified from the beginning that she wanted to become a singer and was accepted into the advanced singing class. Pablo, a male singer, had never had singing lessons before, but played the guitar in a band. He did not have any particular interest in becoming a singer at the beginning of the course and was not put into the advanced singing group. Arielle had considerable singing experience. At her audition she sang a song from the classical repertoire and was confident with sight-singing and different languages. On account of vocal dysfunction as a child, which led to lack of closure in her vocal chords and a vocal chink, she had attended sessions with a speech pathologist that helped her achieve closure. Out of the four case studies presented Arielle had the most previous experience of singing and speech tuition.

Zana and Arielle were placed into the advanced singing class while Cleo and Pablo remained in the general singing class. Cleo's reflective journal writing showed that in the first session of the course she struggled with confidence and recognised some of her vocal difficulties, but could not yet overcome them. In week 4 of her first year she wrote in her journal:

> I know that I'm not good at singing. This is an area I need to work extremely hard at. Singing is so foreign to me. So whenever I go out of my regular vocal range, I am completely lost. I have no idea where to go and no idea how to get there.

Cleo felt her lack of music education and singing lessons:

> I don't know what half of these aspects of singing (resonance, tone, pitch, airflow) are, I am completely lost.

It was difficult also for Cleo that singing was something she did not excel at and in class she often used clowning as a way of deflecting attention from her lack of skill. In her journal entry at the beginning of first year, she reflected:

> Standing in front of the class doing something I don't know how to do? I hate feeling that vulnerable…my weaknesses were showing. I really hated this exercise. I am working on feeling more comfortable in front of people….like I knew I was shit... I made a joke of it so the attention could be momentarily off my horrible voice. I felt that the nerves took control of my body and I was unable to think of anything else except for how petrified I was.

Pablo started the course the year after Zana, Cleo and Arielle. Although he lacked previous singing lessons, he was insightful and self critical in his reflections from the beginning. In first session of first year he wrote:

> I couldn't effectively release constriction…though I know what it feels like, I have trouble achieving it outside of the sob or siren exercises. I am also still in confusion as to register.

The significance of peer learning in the collaborative construction of learning

A theme common to many other student journals, the positive influence of the peer-learning group on their performance, was revealed in Cleo's reflections. Early on, she commented on how listening to others gave her a sense of where she was in the group. Then as the year progressed, the peer learning took on a more specific benefit, helping Cleo to further construct her own understanding of singing. She wrote:

> I learned a lot by simply listening to the critiques of others. I began to actively be aware of who was and was not using proper singing techniques; silent giggle, constriction, release of constriction, breath control, pitch, etc. This is something that I have never been able to recognise in myself, let alone others, nor able to articulate before either. I was able to identify what other people were doing right and what they were doing wrong and I learnt a lot from L's critiques, especially her comments about articulation, energy and pace to match accompaniment. I learnt an incredible amount from just listening to the critiques of others over the last couple of days, and have tried to implement those critiques to my own performance.

In the second session of her first year, Zana also began to see value in giving and receiving feedback from others in the class. In her journal entry at the time, she commented:

> I listened to the others and offered them my observations. Usually I am hesitant to give criticism to other people and say very little but I found it was really easy to give people feedback, because I am also beginning to notice more about how others perform, and what they are doing with their body and voice while they do it. This seems to also be helping me also, as I am able to watch for it in my own performance.

Vygotsky's theory of Zone of Proximal Development (Vygotsky, 1978) promotes the idea of a novice performing a range of tasks that they cannot accomplish on their own, but in collaboration with an expert are able to achieve. The emphasis is on the collaboration and eventual shared understanding that develops between the expert and novice. To reach the learner's ZPD, the expert's assistance should be

slightly above the level of the learner's independent performance, but provide enough support to enable them to complete the task (Vialle, Lysaght, & Verenikina, 2005). In Zana's case, listening to the other students who were at a similar level, but a little more advanced, helped her hear the things that were within her ZPD and therefore were achievable goals. She wrote in her journal:

> Every week in performance class I learn more about the amazing control singers have to have over their voices in order to produce the sounds they do. The difference between the third years and us is just amazing and I can see that training and applying these techniques is quite a long term thing that will take many years but you will still always be improving.

Arielle had mixed feelings about learning singing in small groups. She had had many years of previous training with a singing teacher in a one-to-one studio setting and she found it very difficult now to study in a group. She approached the lecturer/researcher many times after class to express her feelings of dissatisfaction and said that she just felt she could not improve in this sort of environment. Finally a compromise was reached with the suggestion that Arielle take individual lessons outside the course with another singing teacher. In second year she started receiving a mixture of group and one-to-one lessons at the university. The singing teachers and coaches consulted with each other on a regular basis to check on what each was teaching her and Arielle was much happier:

> I am really happy with my progress this session and I think that the combination of private lessons with K, private lessons with L and an occasional group lesson, is a combo that really works for me.

Reflection

Reflection engages students in a meta-cognitive thinking process (Burwell, 2005). This makes practice more efficient because when musicians possess a certain amount of meta-cognition about their practice, they can think about what they need to do, in order to improve (Parncutt, 2007). Acquiring these meta-cognitive skills also means that students become more in charge of their own learning, thus becoming self-regulated learners. Zana was a case in point. She had begun to diagnose what was happening to her singing and was now working out what she needed to do in order to fix certain vocal problems. In her journal entry at the time she commented:

> I have only recently really understood that by connecting the vowels on a string, you also create a flow through the words and it means that you still hold onto an idea even though you aren't making a great amount of sound. Because of this revelation, I have started to be able to recognise when I am doing it as well as other people. I have to really focus on hearing all those vowel sounds and extending them until I come to a new vowel sound but if I see them in my head then this isn't too difficult. I also need to be aware of not letting my airflow interrupt this line and allow it to compliment it instead.

Another example of self-regulated learning developing was in the case of Arielle, who discovered a way to use reflection to prepare for performance. She, like Zana and Cleo, found it useful to read other sources as part of her preparation:

> I found some really good reminder phrases in Barbara Conable's (2000) 'The structures and Movements of breathing' (pp. 10, 11). These are reminders of different things you should

> be remembering whilst singing. A teacher could say them to you or you could ask yourself the questions before you perform**.**

Cleo was developing what Schön (1983) has described as reflection in action. In order for all this to take place, she had to be in an authentic, experience based learning situation with real problems to overcome. She then held a 'reflective conversation' with the situation and worked out how to overcome the problem:

> I realised the first couple of runs through something wasn't right. I realized that I must have been closing off my airflow and restricting my vocal chords, as it almost felt impossible to make a sustained sound. Briefly between songs I relaxed and laughed silently then attached the sound to the airflow, opposite to what I had been trying to do before. Eventually this enabled me to create a sustained airflow and sound that was more whole with more depth to what I had previously been producing.

Identity construction and change

Cleo's ability to overcome vocal problems while in performance was a complete transformation from the student who had initially used her clowning as a way of distracting the other students away from her singing. Despite her poor beginning in this performance, she had gained confidence in knowing what she had to do in order to improve her singing and this helped her immensely.

Cleo also displayed the ability to reflect on her own development and devise strategies for fixing problems like constriction. While Cleo could recognise herself as a habitual constrictor, she also realised that constriction was not a permanent problem, but one that needed to be worked through using strategies she had learnt:

> I need to make sure that I don't constrict, as I'm a habitual constrictor. To combat my nerves I just try to force more air out to produce more sound, which is why at times I sound like I'm forcing the sound. This constriction is also due to my nervousness on stage.

Cleo recognised quite early on that the course was deliberately designed so that students had to take responsibility for their own development and learning:

> I feel like I am several steps behind the rest of the class and am in need of extra practice and rehearsal to try and at least match them. I'm realising this is primarily a course for independent learning, you get given tools and techniques e.g. body awareness, breathing techniques, distracting techniques, activating exercises. Then it is up to you to put them into practice.

In the second session of her 1st year Zana began to construct a technique for herself. She used information from reading texts to triangulate the validity of the information:

> L went around making sure the back muscles were engaging as well as gesturing for us to open our throats. She also let us feel her expanded ribs to show us just how much they should be opening. I was amazed at L's rib expansion and found that my own was not quite right and not nearly as large which is to be expected but it gave me an idea of just how much expansion could occur. I looked at a book by Oren Brown 'Discover your voice' (Brown, 1996), and a passage explained why this expansion must occur in order to increase volume and hold long

> phrases properly so I found myself better able to visualize what should be happening and put this into practice.

Zana had gradually transformed herself from a belter with a breathy, constricted head voice, into a soprano capable of singing repertoire that required flexibility and good tone in the upper register. Zana tried to make improvements by incorporating reading from other sources, which turned out to be an effective means of mediating learning for quite a few students. The reading initiated a critical examination of different exercises that were presented to Zana by teachers. She compared them to exercises suggested in the books she was reading and made decisions about which exercises worked:

> L suggested using one of the energising techniques we learnt in movement but I know that what works for me better than these is the exercise where you support yourself on your hands and toes while being raised off the ground. Kayes (2004) says that this is because the space has opened in the larynx and the vocal folds are able to vibrate more freely. The action of my hands pulling apart I think helps with this because I have a visual image to attach to the feeling in my throat that I have no possible way of actually seeing.

Arielle was also reading from other theoretical sources to confirm some of the technical things she adopted. She thought of them as 'tips':

> Another tip that I got from a book titled "Solutions for Singers" was in regards to 'tanking up' for long phrases, or taking a massive breath in. Richard Miller recommended in this book that one breathe slowly and silently with no visible chest displacement because "over-crowding the lungs induces a faster rate of breath expulsion" (Miller, 2004:21). I think that I used to

> tank up, but since I have been trying to breathe noiselessly, I think I have curbed my habit of "Tanking up".

The singing lecturer had been employing the professional language introduced by the spoken voice lecturer, in order to simplify transfer of knowledge from one skill to the other. Zana's reflections were revealing in that she had a notable command of this language and could apply this command to what she was now able to hear:

> As my knowledge of vocal anatomy increases I feel I can better apply this to my own independent practise as well as criticising others constructively, which helps them improve as well.

Zana's writing skills and the application of theory to practice that she was now making were also developing. While she may not have fully understood all the concepts when they were first introduced to her, by the time Zana had reached second year she had begun to achieve a deep understanding of their meaning (Wertsch, 2007). Her reflective journal illustrated her own recognition of this understanding:

> In terms of how I sound and recognising what I need to do to improve I am improving dramatically. I found that in my practice sessions I had enough knowledge to be able to hear when a sound was breathy and concentrate on releasing constriction, using twang and a giggle posture and fixing the problem.

The growing perception by these four students that they were capable of taking responsibility for their own vocal technique and musical interpretation meant that they had succeeded in developing their own strategies for practice and improvement.

Zana was content to receive her instruction through class teaching for the first year of the course and then a mixture of class and one-to-one lessons in second year and the beginning of third year. She often wrote that it was helpful to watch and critique other students in class. Her understanding of technique and how to apply different techniques to her developing practice became more and more sophisticated. In the first session of her 3rd year, the faculty embarked upon an ambitious project to mount a new opera. The opera was challenging musically and vocally and involved a synthesis of Arabic and Maltese folk music with 12 tone serial composition. Zana sang one of the lead roles and for the first time in her reflective journal, she began to discuss how important she found the one-to-one lessons to her development:

> I am increasingly finding that while I am capable of a technical function I need to be directed to do it and that I am not hearing when I could be doing something better. The process this session may allow me to be more attuned to this but I cannot help thinking that there will always be things that I will need to be told I am doing before I can recognise them. Recording myself could be a useful strategy to help this although I am sure that having someone else listen is necessary for anyone to progress.

Zana's singing had developed to a point where she needed more specific help from experts who could guide her to the next level. The complexity of the repertoire and the specific skills that were required both musically and vocally to solve problems that arose could not be provided simply through collaboration with peers.

Vygotsky spoke of development occurring in cycles of maturation processes that have already been completed and those that are just beginning to develop and mature (Vygotsky, 1978). At the same time a student can only reach a

level that is within her developmental potential. Vygotsky wrote that "the zone of proximal development permits us to delineate the child's immediate future and his dynamic developmental state" (Vygotsky, 1978, p. 87).

In Zana's case, her vocal development when she was cast in the opera was not at the point where she could sing the complex rhythms and melodic lines, nor had she had to cope with sustained high tessitura and singing over an orchestra. Her previous development in class and her increasing meta-cognitive skills that were displayed through her reflective writing meant it was possible to predict that, with guidance from her teachers she would be able to develop the skills necessary.

Discussion

The students found the introduction of a technical language (Conable, 2000; Estill, 1996; Kayes, 2004; Obert & Chicurel, 2005) that helped them describe the concepts that they were trying to understand, was extremely helpful. This in turn gave students confidence to give feedback to each other in class. The experiences recounted in these students' journals suggest that if the teaching environment is arranged in such a way that peer learning is encouraged, singing students find this an extremely helpful strategy. The students can use peer learning to confirm vocal issues they are unsure of and this confirmation indicates, to less advanced students, what is achievable. Perspective sharing is an important part of a socio-cultural approach and 'insights into the practices of others can be a valuable learning experience' (Ladyshewsky, 2006, p. 74).

Vicarious reinforcement (Bandura, 1971; 1997 in Ladyshewsky, 2006) occurs by observing the experience of others and then modifying your own behaviour based upon the outcomes that they experience. These statements about perspective sharing and vicarious reinforcement are supported by the reflective journal writing,

where students speak about gaining confirmation about their own developing techniques by watching the performances of others in class.

The traditional structure of teaching in conservatoires and musical academies may encourage certain learning strategies and not others. 'If classical musicians are routinely trained in the use of imagery, they are more likely to report using it. Consequently the use of imagery will be more likely to appear in studies that sample classical musicians' (Kamin, Richards, & Collins, 2007, p. 450). Kamin et al discovered that non-classical musicians found peer influence exclusively positive, whereas for classical musicians it was a bit of both. Their recommendation was that peer influence is a good strategy for students, but only in certain contexts and perhaps the classical music context is not one of them.

Nielsen (2004) found that peer learning was used to a lesser extent for students studying music in a Norwegian Music academy than other strategies such as rehearsal strategies or critical thinking strategies, which again suggests that the structure of the training encourages those sorts of strategies.

The present study has found that if peer learning is encouraged through the restructuring of the learning environment, both classical and non-classical undergraduate singers find it helpful to interact with their peers. The value of peer learning that emerged from the data collected from students' reflective journals demonstrated how they were socially constructing their knowledge through listening to the experiences and strategies that others used.

The amalgamation of music and drama has meant that in the yearly intake of new students, there is a large variation in how much singing and music education they have received. Those students who have expressed mixed feelings about small group learning have usually come from similar backgrounds to Arielle. While they do acknowledge how useful it is to learn with others, they have often had five or six years prior one-to-one singing lessons before entering the course

and find it quite difficult not to receive the individual attention. The same solution has been offered to them as Arielle and seems to work; however, it does mean a constant effort on the part of the singing teachers to keep each other informed. The other advanced singing students also admit that once they begin receiving some one-to-one lessons and coaching, within the structure of the course, they love the individual attention that comes with the one-to-one lessons. In Zana's case, she reached a level of development that meant it was necessary for her to work with coaches who had a level of expertise that could guide her to the next stage.

Another by-product of the course transformation and also another example of ZPD (Vygotsky, 1978) is that the non-classical singers in the performance course at the university often seek out an advanced classical singer to help them with technique. Social interaction amongst students had to be encouraged within the culture of the school. An unanticipated consequence has been the breaking down of the dichotomy that sometimes exists between classical and non-classical singers or even the singing minor versus major that is often part of the conservatoire structure. One student who entered the course with no interest in becoming a classical opera singer was so influenced by her peers she switched to the advanced singing group.

The reflective journals the students have kept demonstrated that their writing assisted them in thinking and problem solving, which is consistent with Vygotsky's understanding of the development of language (1978). The journals provide an opportunity for students to solve a problem by thinking about the solution, carry out the solution through the activity of singing and then refine the solution if necessary. The author has consistently noticed that in students' reflections there appears to be a connection between an improvement in their singing and an improvement in their reflections. Anecdotal evidence from conversations with students confirmed that as they started to understand more

about how their voices worked they had more interesting things to reflect on, so they wrote more and explored these developments, which in turn helped their reflective writing as well as their own practice. In Pablo's case, his journal writing became much more detailed once he had mastered the technical terms to express himself. Zana and Cleo used their journals as a way to synthesize the different perspectives they were getting from books, and other classes involving spoken voice. The strategies devised to help with solving problems, were then used in a fresh cycle of comprehension through to reflection and this cycle continued (Clarke, 1999).

Conclusion

The results of this study suggest that there is value in peer learning and reflection for both classical and non-classical singers at an undergraduate level. At the same time, there is no doubt that there is still a place for individual tuition, particularly for advanced classical singers. In second and third year of the three-year degree, the advanced classical singing students are provided with individual repertoire coaching and their session is divided into 6 weeks of class work and 7 weeks of individual lessons. The combination of group and individual lessons has worked well for the classical singers as they learnt vocal exercises and technique with their peers, and then worked on their own individual repertoire for the rest of the session. The non-classical singers continue with small group lessons throughout their degree.

The reflective journals that students keep have repeatedly shown the high value that students place on watching the development of others and learning with them. The peer learning then reinforces the reflection as they critically evaluate each other and themselves, through the process of participating in class. This interaction seems to motivate their further learning.

Students who do not have the opportunity to experience one-to-one lessons, in the traditional conservatoire style, have still managed to develop their singing using strategies such as reflection and peer learning. What has been lost in the process is the amount of individual repertoire that an undergraduate typically would have gained in a conservatoire; however that is made up for by providing every student with the opportunity to perform in six fully mounted productions during their three-year course. The productions require them to transfer the skills they have learnt in class to an authentic performance situation. By learning in classes, at an undergraduate level they develop a language in which they can discuss their singing and through these discussions that often take place in corridors, during lunch times and with friends, they begin to construct a deep understanding and appreciation for the practice of singing. This chance to talk things through is another example of Vygotsky's concept of inter-mental learning. The fact that Cleo, Arielle, Zana and Pablo recognised early on that they were expected to take responsibility for their own learning, without the one-to-one support of a teacher, meant they made more of an effort to pay attention to what others were doing in class. Group teaching also meant that the students reflected on whether what they observed in others, could somehow be applied to their own practice. They have become well informed singers capable of critically evaluating technical problems in others and themselves and in this have managed to transform what Vygotsky (1978) described as an interpersonal process into an intra-personal one through reflection and peer learning.

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Chapter 4

THE CONSTRUCTED VOICE: A SOCIO-CULTURAL MODEL OF LEARNING FOR UNDERGRADUATE STUDENTS

Article published as: Latukefu, L. (2007). The constructed voice: a socio-cultural model of learning for undergraduate singers. Australian Voice, 13 8-15

Abstract

This article reports on the design and development of a model of learning for undergraduate singers influenced by socio-cultural theories. It draws on data collected from student reflective journals and the findings of a study conducted in 2005 where the aim was to examine the response of students to a changing curriculum in which traditional 'bel canto' singing technique was taught in conjunction with spoken voice class. the participants in the study were undergraduate students studying performance in the Faculty of Creative Arts at the University of Wollongong.

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Chapter 5
PEER ASSESSMENT IN TERTIARY LEVEL SINGING: CHANGING AND SHAPING CULTURE THROUGH SOCIAL INTERACTION.

Article accepted for publication as: Latukefu, L. (2010). Peer assessment in tertiary level singing: changing and shaping culture through social interaction. Research Studies in Music Education, 32(2)

Abstract

In 2008, peer assessment was introduced into the singing component of a tertiary level undergraduate creative arts performance course within an Australian regional university. The study investigated what effect changing the role of the actor/singer in an assessment has on the culture of the course as well as individual development of graduate qualities, such as critical thinking and responsibility. It also looked at what process was involved in order to integrate peer assessment into the subject, and what kind of support was needed to achieve this. Results suggested that students saw themselves as agents of their own assessment activities by taking control of assessment, and that having to think critically about other student performances made them reflect on how effective their own performances were.

KEYWORDS: peer assessment; vocal pedagogy; reflection; self-regulation

Introduction

In 2008, peer assessment was introduced into the singing component of the undergraduate performance course within an Australian regional university. The purpose of this exercise was to encourage students to become better self-regulated learners, who would be capable of continuing with their learning after graduation. In an article that gathered together the main concerns being addressed in studies on self-regulated learning, Montalvo and Torres (2004) found that self-regulated learners "see themselves as agents of their own behaviour, they believe learning is a proactive process, they are self-motivated and they use strategies that enable them to achieve desired academic results" (p. 4). Montalvo and Torres also point out that these characteristics coincide with those attributed to high-performance, high capacity students, but that with adequate training all students can improve their control over learning and performance. In general, students who self-regulate their learning "show greater effort to participate in the control and regulation of academic tasks, classroom climate and structure" (Montalvo & Torres, 2004, p. 3).

The present study on peer assessment was part of an ongoing study to develop a model of learning singing underpinned by socio-cultural theories. In undertaking a Vygotskian approach, the singing class environment was specifically designed to encourage self-regulated learners who learn from social interaction with each other (Latukefu, 2009). Falchikov (2007) has argued that peer involvement in assessment has the potential to encourage learning and develop assessment skills that will last a lifetime. She also states however that peer assessment without modeling or scaffolding has no value added to the student learning, and that if students are merely completing an exercise without understanding the standards or criteria which will help them acquire skills in judgment they are no better off than in the framework of traditional assessment.

Literature review

The present study began with the pedagogical goal of developing in singing students, the ability to critically discern quality (Sadler, 2008). The university that provided the context for the study requires that students be given criteria for all assessment tasks. The breaking down of holistic judgments into components is supposed to make the process of assessment more transparent for the students. Sadler points out that holistic rubrics use extended verbal descriptions to set out characteristics rather than breaking them into components. He made several observations on the use of analytic versus holistic rubrics, one of which included the discrepancy between global and analytical appraisals where a work or performance judged as brilliant may not necessarily rate outstandingly on each criterion.

A study in music assessment (Stanley, Brooker, & Gilbert, 2002) also supported an argument for developing descriptors of quality with students rather than a conventional analytic rubric. Stanley et al. (2002) reviewed assessment procedures carried out at the Sydney Conservatorium of Music in 1995 and reported that most assessors initially adopted a holistic rather than an analytic approach to assessment of performances. They relied on an initial gut response as to whether or not they were enjoying the performance. They then went through a process of justification in order to identify what characteristics justified the feeling they had initially. They also reported filling out specific criteria at the end of the performance because over the course of a few pieces this might have to be radically adjusted or because they used it as a way to justify their gut feeling that the performance was worth a certain grade. One respondent commented that "you can get a kid that plays out of tune and out of time but you are crying because it is so expressive or so wonderful. You can (also) get a kid that plays dead in tune or dead in time and absolutely immaculate dynamics that leaves you totally cold"

(Stanley, Brooker, & Gilbert, 2002, p. 52). This notion of judging performances on their total impact rather than components was important in the development of the research questions developed for this present study.

Another pedagogical goal of the present study was to encourage students to develop graduate qualities such as critical thinking, reflection, and responsibility. The contribution of peer assessment in developing these qualities is supported in the literature. Searby and Ewers (1997) concluded that having to work out what criteria of assessment were to be employed and then having to apply them to real work focused the students' minds on what made the work good or bad. Blom and Poole (2004) concluded that "peer assessment in a tertiary performance programme offers a relevant and meaningful context for deep learning about performance assessment and performing to occur" (p. 125).

A review of the literature, and analysis of current practice, found that there were relatively few music institutions that had formal peer assessment as part of their programs. Those that did (Blom & Poole, 2004; Daniel, 2004; Hunter & Russ, 1996; Searby & Ewers, 1997) were positive about the learning outcomes for students, but held reservations about the process. These reservations included: over-marking by students, extra workloads for both students and teachers, problems arising when different instruments and genres are involved, and lack of readiness on the part of students to take part in the exercise. Searby and Ewers (1997) discussed the aspects that contributed towards the overall effectiveness of the system and issues and experiences that arose from the implementation of peer assessment at Kingston University. Arriving at a correct mark was a source of worry for students who were new to peer assessment, who felt they were not qualified to make judgments on other students' work, and were reluctant to get involved. Students were expected to provide a detailed report as feedback on the performance. A minority of lecturers complained about the quality of these reports.

An aspect that the researchers at Kingston University felt to be important was to make sure that students learnt as much as possible from the process.

Engaging students in the process of integrating peer assessment into the singing subject was considered central to the present research. The importance of student participation in the process of developing assessment criteria was a consistent theme in the literature on peer assessment in music courses (Blom & Poole, 2004; Daniel, 2004; Hunter & Russ, 1996; Searby & Ewers, 1997).

Researchers at Kingston University created a set of generic guidelines in the initial implementation of peer assessment. These included:

- The establishment of a training scheme in peer assessing for students;
- The establishment of a set of criteria of assessment, which would be negotiated with the students concerned (a vital part of the process);
- The establishment of clear and effective administrative systems (Searby & Ewers, 1997, p. 372)

This set of guidelines was used by the author/researcher as the starting point for the design and implementation of peer assessment into the singing subject.

The present project investigated the following questions:

- What effect does changing the role of the singer in an assessment have on the culture of the course and graduate qualities,[1] such as reflection, critical thinking, and responsibility?

[1] Graduate qualities are developed by Australian universities to describe the distinctive qualities of a graduate of that university. They are used to guide staff who are engaged in curriculum development and help students to develop personally and professionally. (University of Wollongong Graduate Qualities

- What is the process of integrating peer assessment in a tertiary level singing subject, and what kind of support is needed to achieve this?
- Does constant interaction with descriptors of quality lead to what Sadler (2008) describes as "the creation of environments in which the critical discernment of quality becomes a key aspect of learning, drawing on what is known about connoisseurship in other contexts" (p. 18)?

Method

To capture the developmental nature of this pedagogical project and the context in which it was carried out, a design-based research methodology was employed. There are many different permutations of design-based research methodology (Bannan-Ritland, 2003; Barab & Squire, 2004; Design-Based Research Collective, 2003; Gravemeijer & Cobb, 2006; Lenski, 2001; McKenny, Nieveen, & van den Akker, 2006; Reeves, 2000; van den Akker, 1999). Wang and Hannafin (2005) define design-based research methodology as "a systematic but flexible methodology aimed to improve educational practices through iterative analysis, design, development, and implementation, based on collaboration among researchers and practitioners in real-world settings and leading to contextually-sensitive design principles and theories" (pp. 6–7). Design-based research methodology leads to a development of knowledge that can be used not only in practice, but to inform other practitioners.

Research site and participants

The singing program is currently taught as part of actor skills training in a creative arts degree program at an Australian regional university. The participants are

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Policy, available from: http://www.uow.edu.au/about/policy/UOW058682.html#P73_1243)

undergraduate acting students aged around 18–21 years of age. Originally singing had been part of a music degree and singers were trained classically, however the music and drama departments were amalgamated in 2002 and the focus changed to contemporary vocal practice. At the end of first year in the degree, all singing students are given an opportunity to audition for a specialist singing class. The focus of this class is on classical singing training combined with contemporary performance practice.

Collaboration between researcher and students

There were two phases in the project. The purpose of the first phase was to gather together a focus group of six students using purposive sampling to ensure that diversity of the student population was represented in the sample. Gender equality was a factor in the purposive sampling and I also wanted to ensure there was representation from Indigenous and African students who were in the course at the time. Finally I tried to get an equal mix of specialist and non-specialist singers in the focus group. This reflected the stage of "collaboration among researchers and practitioners in real-world settings" in development research methodology (Wang & Hannafin, 2005). The aim of the focus groups was to gather as much information as possible from the students about criteria they thought important for high quality singing. The six students attended two focus groups in which they discussed the best process for implementing peer assessment into singing classes and how to solve possible problems that might arise during the exercise. The purpose of the second phase was to implement the design into the singing course in order to include the rest of the student population in the project. The design of the peer assessment task was implemented in singing classes and data about the student experience of the exercise collected through a survey sent out to students, reflective journals that students are required to keep, and the in-class notes from lecturers.

Finally, a systematic documentation, analysis, and reflection on the research process and outcomes were carried out (Wang & Hannafin, 2005).

Implementation

Some of the issues raised by the students in the focus group in relation to peer assessment were as follows:

- How to deal with the different standards of skill levels among students.
- How to account for different tastes or reactions to an individual's style and genre of music.
- Should assessment be relative to an individual's improvement or compare students to see who is best?
- Over marking of friends.
- How many should be on a panel and the practicalities of writing up reports.
- Privacy and confidentiality issues: how to respond if the student wants information about the panel's decision.
- Over professionalism: being too critical to demonstrate how professional the panel member is.

All these points were taken into account when working with the students on peer assessment.

In the second focus group, the students discussed what they thought would make the peer assessment a good process. They decided on the following points when developing descriptors of quality, which were then implemented by the lecturers in class.

- Have criteria clearly laid out and printed and ensure each student has a copy.
- Give a good introduction and encourage discussion when criteria are handed out.
- Explain the reasons for introducing peer assessment, and, in particular, emphasize the idea of learning to critique as a skill development for future work.
- Reiterate all this in the first 4 weeks of classes.
- Give examples in class of different standards of achievement of the performance qualities.
- Have the lecturer critique the critiques of the first 4 weeks giving particular attention to the critiquing skills of students.
- Reinforce the notion that the qualities assessed using peer assessment are those that students are already being assessed on and taught.

There were 15 students in 3rd Year and 20 students in 2nd Year participating in the peer assessment exercise, and all agreed to participate in the study. In week 5, the 2nd and 3rd Year students formed panels and the three students in the panel assessed another student in the class. The panels discussed the performance and agreed on a mark. The panel also provided written feedback to the performer.

Fading of support (Falchikov, 2007) is where the lecturer gives support to the class through modeling or directing students, but slowly withdraws this level of support and involvement over time. In the case of the present study, the lecturer gave the students lots of prompting in the first 2 weeks in order to help them with critiquing each other, but then began to withdraw from the discussion by

week 3. This is consistent with the socio-cultural approach used in the study and with the concept of scaffolding in particular. Scaffolding is "a change of quality of support over a teaching session, in which a more skilled partner adjusts the assistance he or she provides to fit the child's current level of performance. More support is offered when a task is new; less is provided as the child's competence increases, therefore fostering the child's autonomy and independent mastering" (Berk & Winsler, 1995, p. 171).

After the implementation of the peer assessment exercise, all the students who took part were sent an open-ended questionnaire (see Figure 1) inquiring about their experience and perception of peer assessment. This feedback allowed for iterative analysis of the developed peer assessment process. A majority of students (30 out of the 40 students) who took part in the exercise responded to the questionnaire. Some of the questions were based on questions that had been used to evaluate a peer assessment exercise carried out by Falchikov (1995).

Figure 2: Peer Assessment Questionnaire

1. **What did you like best about the peer assessment exercise? Why?**
2. **What did you like least about the peer assessment exercise? Why?**
3. **Peer assessment makes me:**
    a. **Think critically- Strongly agree/agree/strongly disagree**
    b. **Feel a sense of responsibility- Strongly agree/agree/strongly disagree**
4. **Could you comment on how your personal knowledge about the student you were assessing affected your judgment?**
5. **Could you comment on how this peer assessment exercise may have affected your own learning?**

Descriptors of quality

The descriptors of quality developed in collaboration with the students in the present study (see Table 1) used the concept of a holistic rubric to adapt a model developed by staff at the Queensland University of Technology (Thomas & Millard, 2006). Different levels of technical and musical interpretation were expected in the different years, and this meant that two different descriptors of quality were constructed. In the pilot study, students were provided with these descriptors of quality and the instruction to add any others they saw emerge from the performance and mark the performance on the overall impression. This second approach was recommended by Sadler (2008).

Table 1: Descriptors of quality adapted from model developed by staff at the Queensland University of Technology (Thomas & Millard, 2006) 2nd and 3rd Year peer assessment criteria

Technical achievement	**Interpretative skills**	**Professional skills**	**Qualitative judgments to think about**
Anchoring- ability to anchor in shoulders and back constantly while singing **Good Posture** **Silent intake of breath and good airflow** **Energised**- posture is dynamic, gestures are made energetically and vocal tone is vibrant. **Intelligibility**- vowels are well formed and resonant **Sob-** attempt at sob **Twang**- able to incorporate some twang into sound in middle register (in all registers for 3rd Year) **Release of constriction-** ability to release constriction on short phrases and in low to middle register (on long phrases and	**Communicate with audience-** ability to communicate through body language and vocal colour **Ability to affect audience** through imagination and thought process **Appropriate stylistic choices** **Extra criteria for 3rd Year included** Deep involvement with music and commitment to communication with audience	**Memorization** is complete and reliable **Establishes a relationship** with audience and accompanist **Performer is physically and musically prepared** for the performance	Performance is **compelling and forceful** Performance is **sophisticated and commanding in presentation** Performance is **thoughtful and engaging** Performance is **technically well executed, but bland and unimaginative** Performance is **under-prepared and lacks skill** Performance is **unsatisfying and musically unconvincing**

throughout register for 3rd Year) **Accuracy**- ability to generally sing in tune and rhythmically			

The need to assure that all the students were familiar with all the descriptors was important, as there was not much time in each assessment for students to be re-familiarising themselves with the descriptors. Findings by Stanley et al. (2002) suggested emphasis needed to be placed in examiner training and in order to do this the descriptors were introduced into all classes from week 1 and students were encouraged to frame their informal critiques using the descriptors as a guide. They had been using the same technical language throughout 1st Year, but this was the first time they were asked to constantly interact with the criteria, with the objective of preparing to assess another student's work. There were two singing teachers, one of whom was also the researcher, and it was important for me as researcher and teacher to discuss all aspects of the peer assessment exercise and the phases of implementation with the other teacher.

Results

Critical thinking

A survey was sent out as part of the iterative analysis. It was concerned with exploring student experience of the peer assessment exercise. Students were asked what they liked best about the peer assessment exercise and by far the most common answer was that critically assessing someone else in performance actually helped improve their own performance. Some of the responses from the students to this question were:

> "By assessing my classmates I found that during my assessment I was thinking critically and could therefore work to apply the things I had noticed lacking in previous assessments."
>
> "I liked the ability to be able to discuss as a panel why and how the performance of the singer worked. Playing the assessor gave me an understanding what are the standards and criteria I need to full fill (*sic*) to be able to perform well in my own performance."
>
> "Talking with the rest of the panel was really good for solidifying ideas of what to observe for technique. Also because of the detailed criteria everyone put a lot more effort into preparing for the assessment because we knew what we would be judged on."
>
> "I got a chance to put myself on the other side of the table. The judging side and see what it is that judges view as important in a performance which helps me reflect on what I need to work on."
>
> "The exercise enabled me to critically evaluate my peers, which is something which is not done very often."

The majority of students, 83.3% (n = 25) strongly agreed and 16.7% (n = 5) agreed that peer assessment made them think more critically. When asked whether the peer assessment exercise gave them a sense of responsibility to their classmates, 62.1% (n = 18) strongly agreed, 37.9% (n = 11) agreed that it did.

Students were also asked what they liked least about the exercise. Responses to this question fell into two categories. The difficulty of marking friends was remarked upon most often. The next most common response was that students found it difficult to determine a mark because of the lack of clearly defined weightings given to each descriptor. It meant that, while they felt confident

about giving feedback on whether or not the performer had achieved technical or interpretative or professional quality, it was hard to transform that into a mark that would reflect what had been done in terms of university standards. Some of the responses from students were:

> "I felt like allocating the mark was too vague and could be a more structured process, for instance, our group simply thought about what was appropriate whereas another panel I sat on allocated a certain weight to each component of the rubric. Having more specific guidelines could make finding an actual specific mark much easier and clearer."

> "The lack of clearly defined marking criteria. The descriptors of quality were helpful in viewing the piece. But not in assessing it and giving it a final mark."

> "I felt we were given no weighting for each component of the assessment criteria – this made me unsure whether the marks I was giving were fair or whether I was basing them too much on one area of the criteria while not giving enough importance to another area."

> "Working with peers is difficult because we each have wavering standards. Some are lenient and some are strict."

> "It was at times awkward discussing the performance of a class mate/friend with the other members on the panel which were also your friends."

> "Having to disregard all the process the performers have gone through as we know them as mates and sometimes it was hard to just judge the performance and not the progress."

Responsibility

Students were asked to comment on how they thought their personal knowledge of another student affected their judgment. Some respondents commented that prior realisation that this knowledge might affect their judgment made them not only self regulate, but also make sure the rest of the panel was aware of this issue

> "It didn't and I made an effort not to let those who I was judging on the same panel with to take any preconceived dispositions into account."

> "This was the hardest part about marking. I felt I had to distance myself from my peers in order to give a fair mark for the performance they delivered."

> "I don't really think that I let anything affect my judgment. I tried to mark just on the basis of what I heard and the criteria that I had. I would expect everyone to do the same for me and I think the only way we will improve is by people being honest so that's why I tried not to let anything affect my judgment."

Quite a few of the responses to this question commented on how useful it was having the panel there to help overcome any personal bias or comparisons to previous performances in class by the person being assessed.

> "The only affect it may have had is comparing their previous in class performances to their performance on the day; however

> discussing with the other panel members helped me to try and separate this occasion from previous ones."

The final open-ended question in the survey was how students felt peer assessment affected their own learning. Most students felt that the peer assessment exercise helped with their own vocal development by firstly giving them criteria that described good quality singing, which they could reflect on and then forcing them to reflect on this by having to take responsibility for critically assessing each other's performance using the criteria. Some responses from students showed that they felt the peer assessment exercise was a good way to prepare them for an industry where they might have to critically assess a peer.

> "I feel like I have a better grasp and am more competent in terms of assessing someone's ability to perform well and now have a set of criteria I can apply . . . to my own practice as I can be careful not to do things that impair performance that I have noticed in others".

> "It will assist me to critically assess performances, which I may be required to do when in the industry."

> "I believe it helped my learning. I really enjoyed taking on the teacher role and being able to assess someone extensively and be able to express my own reflections on the student. I feel it is beneficial for the future where I will need to not only accept criticism but give it as well."

Intuition

In a few instances there was a contradiction between the feedback that was given and the mark awarded. For example, in one case the feedback was critical of a few

areas of the singing, but the mark awarded was a high distinction. The lecturers on the other hand awarded a distinction for the same performance. This was the feedback given by the student panel:

> **Technical Achievement:** Breathy at times. Posture could be better. Good sob (could be improved). More twang. More attention to the end of phrases (but overall good phrasing). Panel thought she held her breath on long phrases, and this caused some constriction. **Interpretive Skills** Great interpretation! Good choices. Thought processes great when singing, but could be improved at times when not singing. **Professional Skills** Panel thought that more musical decisions could have been made in the musical introduction. Over all good relationship established with the audience. **Qualitative Judgment** Compelling, sophisticated and thoughtful!

In a follow up interview which was conducted in order to find out how the students on this particular panel derived their mark, it was interesting to note that they had broken the assessment into components and given each component a weighting. Then they gave a mark to each component and added up the total, which became the final mark. This was the only time that a mark was more than 10 points different from the lecturers' mark but what had mostly intrigued the researcher was that the mark was not consistent with the feedback, which was more critical. It reinforced the notion that analytical marking of performance does not necessarily give a true reflection of the performance itself. It also showed that by breaking the assessment down into component parts the students overrode their intrinsic knowledge of whether the performance surpassed the descriptors of quality and instead tallied up points and awarded a mark based on overall points scored. While the feedback from students in the questionnaire was that many felt less confident giving a mark without the help of weightings, in fact they were closer in standards

to the more experienced lecturers when they marked holistically than when they broke the mark into components.

Discussion

The students in the focus groups spent many hours discussing issues that could arise from the peer assessment exercise. One of first problems raised was how to deal with the different skills levels among students. While they felt students who had already developed pre-existing skill levels in singing from receiving prior lessons should not be prejudiced against, they also agreed this was a difficult thing to deal with when assessing. Judging in panels was agreed would be the fairest way to deal with this issue.

The students in the focus group were concerned about whether or not assessment should take into account an individual's improvement or compare students. This was a contentious issue in the focus group. Some felt that improvement should be taken into account whereas others felt that this was not a true indication of how good a singer the student being marked was and that in the end that was the main point of the assessment. Again Sadler (2008) points out that criterion-based assessment was developed to give a benchmark for marking students so that not so much emphasis would be put onto a student's development or even comparison with other students in class, but with the criteria. The lecturers stressed comparison with criteria in the preparation for the peer assessment exercise.

Over marking of students was a concern that came up in the literature on peer assessment and the student focus group was especially aware of the possibility of people over marking friends. The focus groups also discussed the possibility of panels being too critical in order to prove how professional the panel members were. The students felt that careful selection of panels was paramount for

the peer assessment to be successful. They felt that students should be given a chance to let the lecturer know that they would not feel comfortable marking certain other students because of prior practising relationships or friendships. In the exercise there was a certain amount of over marking from students, which was consistent with the other literature on peer assessment in music (Blom & Poole, 2004; Daniel, 2004; Searby & Ewers, 1997). Some of the students admitted in the survey that they had been influenced by the fact they were friends with the person they were marking. This came up mostly when asked what they liked least about the exercise, so they were aware of the pitfalls of having to peer review. The student focus group had discussed this potential situation in the focus group meetings and minimised the effect by getting the lecturer to parallel mark with one third of the final mark being given by the student panel and the rest by the lecturer.

The students felt feedback on the assessment from the panel should be available. However, they believed that there should be a discussion in class on the ethics of being in a panel, in which it should be made clear that students should not approach individual members of the panel, and not prematurely disclose what had been discussed.

Falchikov (2007) refers to work done by Trevitt and Pettigrove (1995) which also indicated that peer assessment was thought by students to have relevance to their future careers. One comment by students in the focus group was the need to develop skills that would assist with judging or auditioning peers for companies they might set up or festivals they might be involved in running. All the students in the focus group agreed or strongly agreed that peer assessment was relevant to their personal skills development and also their future career plans.

The main benefit that the students perceived from the exercise was that it helped them to reflect on their own practice by having to make the effort to

interact with the criteria given in order to properly assess a peer. This corresponded with findings at Kingston University that having to work out what criteria of assessment were to be employed and then having to apply them to real work focused the students' minds on what made the work good or bad (Searby & Ewers, 1997).

The comments made by students about each other's performances showed a level of sophistication about the way they were listening and critically assessing what they heard. The present study suggests that a great deal of preparation is needed in order to develop explicit knowledge about quality in singing. A series of workshops over a number of weeks is not long enough for students' tacit knowledge to develop sufficiently. A feature of the relationship between sign and behaviour or word and thought is that it undergoes fundamental change (Wertsch, 2007). Vygotsky began with "the assumption that signs first emerge in social and individual action without their users' full understanding of their meaning or functional role" (Wertsch, 2007, p. 186). It takes time for students to develop an understanding of terms and techniques they are learning. The entire first year of the present singing course is spent preparing students for the peer assessment exercise by introducing them to concepts of singing and a language that they can use to describe what it is they are doing, and also getting them to informally critique each other under the guidance of the teacher. The added responsibility of having to assess another student in 2nd and 3rd Year encouraged the students to interact more carefully with the descriptors of quality so that "discernment of quality becomes a key aspect of learning" (Sadler, 2008, p. 18).

Conclusion

The critical feedback from student panels to each other was one of the most valuable features of the peer assessment exercise. The results show that students became agents of their own assessment activities by having to take more

responsibility for marking other students, which led to them taking more responsibility for their own assessment. The process of having to think critically about other people encouraged students to reflect critically on their own practice and how effective it was, which is precisely the kind of graduate quality students need in order to keep learning after graduation.

Instead of being passive participants in assessment they became proactive in the process and this brought about changes in individuals who started to recognise other students' ability to perform well and gave them criteria they could apply to their own singing. Learning through social interaction was described by Vygotsky when he wrote, "*An interpersonal process is transformed into an intrapersonal one.* Every function in the child's cultural development appears twice: first, on the social level, and later, on the individual level; first *between* people (*interpsychological*) and then *inside* the child (*intrapsychological*)" (Vygotsky, 1978, p. 57). Thus, it can be concluded that the students co-constructed the assessment related knowledge, which they were able to appropriate as their own and apply to self-assessment.

The process of collaborative development and implementation of peer assessment, as described in this article, was underpinned by the provision of appropriate levels of support for students in the training which was conducted prior to the peer assessment exercise. Most important in the process was the encouragement of discussion in class at the time criteria were distributed, and having the lecturer give particular attention to critiquing skills of students as part of the training.

Increased numbers of our graduates begin their performing lives by starting up independent companies or producing short play or music festivals. In such a context, they are often required to assess work done by their peers. Thus, the

exercise also fulfilled the need to develop the skills and protocols that are required when graduates are later in a position to professionally judge a peer. Recognition by students of this future need meant that they took the peer assessment exercise very seriously and were very positive about it continuing as part of the course.

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Chapter 6

Scientific concepts in singing: do they belong in a student toolbox of learning

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Manuscript submitted and currently under review: Latukefu, L. & Verenikina, I. (2010). Scientific concepts: Do they belong in a student toolbox of learning? British Journal of Music Education

Abstract

This article presents part of an Australian study the purpose of which was to look at learning singing in a pedagogical environment designed using socio-cultural theory. The classroom environment was transformed over 5 years in consultation with other staff members and used the reflective journals that students wrote during that time, as a way of refining and changing the design. Themes emerging from the journals were analysed to inform changes to the design. One of the main themes to emerge was student reflections about the scientific concepts they were taught and the ways the concepts were introduced. These reflections became the basis for the discussion in this paper. The study demonstrated that the students' acquisition of scientific concepts of singing affected both their singing performance and their ability to learn in a positive way. The study suggests that scientific concepts of singing could become part of the students' toolbox that helps develop their singing by making meaning of what they are experiencing kinaesthetically and aurally while they sing.

Introduction

This article presents part of an Australian study, which aimed to develop and

critically evaluate a model of vocal pedagogy influenced by Vygotskian socio-cultural theories (Latukefu, 2007, 2009). The overall purpose of the study was to form design principles of such model, based on empirical evidence of how students learn singing. The study incorporated Vygotskian notions of the zone of proximal development, socially and culturally mediated learning, co-construction of knowledge, self-regulated learning and concept formation. The focus of this paper is on the ways that the application of Vygotsky's (1986) theory of concept formation, and the development of everyday and scientific concepts, can enhance vocal training.

Most people naturally acquire singing or speaking skills and develop some level of understanding of how the voice functions (individual knowledge or 'everyday concepts' in Vygotsky's terms). However, to work professionally as a singer or actor requires vocal training in the same way that an instrumentalist is trained to play the violin or piano. Professionally established notions of how to sing or speak, which are historically developed in a particular culture or society, form the basis for such training and constitute 'scientific concepts' (Vygotsky, 1986).

Vocal training can be arranged in different ways depending on the pedagogical views of the instructor. According to the socio-cultural perspective, scientific concepts cannot be simply assimilated by the learner in a ready-made form. To obtain an individual meaning, they have to undergo development (Vygotsky, 1986). This development has to be carefully orchestrated by the instructor in close connection to the individual characteristics and experiences of the learner.

The Theory of Concept Formation

Vygotsky's theory of concept formation is related to the theoretical view of effective learning as a socially and culturally mediated process. This process brings

together the individual experience of the learner and the wealth of the theoretical knowledge accumulated in society (Vygotsky, 1986). "*Spontaneous or everyday concepts* refer to the individual practice; they are the result of spontaneous, empirical "generalization of everyday personalised experience in the absence of systematic instruction" (Karpov, 2003, p. 171). In pedagogical literature they are connected to the notion of prior knowledge and are often referred to as experience-based concepts (Otero, 2006). They are rich in personalised experience and well suited to working in a particular context. However, everyday concepts are inextricably tied to a learner's concrete experiences; they are unsystematic and not easily transferable to other experiences. They are hard to define in words and to operate with at will (Vygotsky, 1986). Additionally, they are likely to include misconceptions and are "often wrong" (Karpov, 2003, p. 171). The types of misconceptions that occur in relation to vocal learning can relate to breathing and support techniques. These misconceptions may lead to throat and tongue tension and lack of breath control, which affect the vocal resonance and stamina of the singer. Shewell (2009) pointed out that in singing there is often a feeling that things are happening from a totally different place than what is scientifically possible.

Scientific concepts represent the body of knowledge that has been built up through scientific research and are also referred to as academic concepts (Ortero, 2006). Scientific concepts are acquired consciously, according to a certain system of formal instruction. They are generalised, systematic and are abstracted from concrete experience, and therefore are easily transferable from one context to another (Vygotsky, 1986). The acquisition of scientific concepts helps to mediate students' thinking and problem solving and restructure their spontaneous concepts (Karpov, 2003). It allows the learners to see spontaneous knowledge in a broader perspective and use it in a voluntary manner. "The strength of scientific concepts lies in their conscious and deliberate nature" (Vygotsky, 1986, p. 194). Shewell

(2009) characterised excellent singing teaching as being able to communicate relevant knowledge and practice of techniques that develop and protect the voice and above all "a good knowledge of vocal anatomy and the physiological practicalities of the singing voice" (p. 8).

Vygtosky asserted that both scientific and everyday concepts are essential for effective learning. He described the intricate relationship between experience-based and scientific concepts as follows.

> In working its slow way upward, an everyday concept clears a path for the scientific concept and its downward development. It creates a series of structures necessary for the evolution of a concept's more primitive, elementary aspects, which give it body and vitality. Scientific concepts, in turn, supply structures for the upward development of the child's spontaneous concepts toward conscious and deliberate use. Scientific concepts grow downward through spontaneous concepts; spontaneous concepts grow upward through scientific concepts. (Vygotsky, 1986, p. 194).

The interrelation between spontaneous and everyday concepts is part of a broader question of the role of formal instruction in learning. According to socio-cultural approaches, effective teaching fosters the interactions between scientific and everyday concepts, which lead to a 'true' concept formation (Daniels, 2001). The role of the teacher in this process is paramount as it is in communication with more experienced members of society that social understanding [scientific concepts] is made available for individual understanding (Daniels, 2001, p. 51). It is the integration of scientific concepts with a student's everyday concepts that helps the vocal learners to achieve competence outside of the studio (Hedegaard, 2007).

Scientific Concepts in Teaching Singing

In relation to vocal pedagogy, scientific concepts are related to the anatomy and physiology of the vocal tract and body, the various body parts that are important for singing, the ways that they work together to achieve good vocal skills and the techniques involved in acquiring the motor skills of singing. These might include breath management (Chapman, 2006; Conable, 2000; Miller, 1986), phonation (Titze, 1995; Watts, Barnes-Burroughs, Etis, & Blanton, 2006; Westerman Gregg & Scherer, 2006), resonance and articulation, registration, (Kenny & Mitchell, 2006; Mürbe, Sundberg, Iwarsson, Pabst, & Hofmann, 1999; Oates, Bain, Davis, Chapman, & Kenny, 2006), acoustical measurements of good singing and what happens physiologically to achieve this (Oates, Bain, Davis, Chapman, & Kenny, 2006) and ventricular fold abduction and differentiated movement in the vocal apparatus (Estill, 1996; Kayes, 2004; Obert & Chicurel, 2005). Body mapping (Conable 2000) is another example of using scientific concepts to help singing students become aware of the exact location of muscles, organs or bones that work together to create quality in singing. This awareness has implications later on when combined with the use of imagery in teaching.

There is an ongoing debate on whether, and how, these scientific concepts should be taught to enhance learning singing. Research on motor skill acquisition carried out by Verdolini-Marston and Balota (1994) showed that too much information given to students while trying to master motor skill acquisition can have a detrimental effect. On the other hand, there was a concern that singing students at various tertiary institutions were not being taught scientific concepts of singing (Callaghan, (1998). This continuing debate is still evident in a recent anecdotal observation of one of the authors as follows. In 2009 she attended a music conference in London where she witnessed a discussion amongst singing teachers about whether or not there is any value in introducing scientific concepts

to singers. While the majority of teachers agreed that it was necessary for them, as teachers, to know about scientific research, some of the teachers argued, that it was not necessary for students to be told this information. Recent literature suggests, that in order to progress the teaching system, the singing profession needs to bring together scientific categories from multidisciplinary fields and to develop a common language in order for teaching singing to be improved (Chapman, 2006).

Following Vygotsky's theory of concept formation, it is necessary to introduce scientific concepts to singing students. However, consideration ofthe way the concepts are introduced to the learner is essential. It would not be helpful simply to try and pass the knowledge of scientific concepts to the singing students as, "direct instruction in concept [formation] is impossible" (Vygotsky, 1987, in Daniels, 2001, p. 54). True concept formation occurs when the teacher encourages interaction between the spontaneous knowledge of the student and scientific concepts (Vygotsky, 1986).

Approach and Methodology

The conceptual model of teaching singing underpinned by socio-cultural theories was created by employing development research methodology, "a systematic but flexible methodology aimed to improve educational practices through iterative analysis, design, development, and implementation, based on collaboration among researchers and practitioners in real-world settings and leading to contextually-sensitive design principles and theories" (Wang & Hannafin, (2005), pp. 6-7).

In 2001 Music and Theatre departments in the Faculty of Creative Arts at an Australian regional university were amalgamated. This meant that teaching singing in the traditional conservatoire model of one-to-one studio lessons was no longer possible. Instead of one-to-one teaching there were now several classes each containing 10-12 students. The flexible interaction between teacher and student in the former one-to-one lessons was no longer possible and so the classroom

environment was transformed and used the reflective journals that students wrote during that time, as a way of refining and changing the design. Also influencing the design was student feedback from teacher surveys conducted every session, focus groups with students and consultation with lecturers from the Education Faculty on aspects pertaining to a socio-cultural theoretical framework.

Participants

Three different cohorts each of 35 students took part in the study. All students agreed to allow their journals to be retained and analysed over the three-year degree. The students were aged between 18-24 years and had differing levels of singing skill. Some students had started the degree with previous singing experience and others had no singing experience at all.

The introduction of the scientific concepts

The singing course strove at all times to ensure that there was a constant link between everyday concepts about singing and what was being introduced as a scientific concept through the embodiment of the practice of singing.

Scientific concepts were introduced in teaching singing at first year level in the form of body mapping (Conable, 2000). Most of the students had very little knowledge of anatomy and so class time was spent drawing their bodies on butcher paper and putting in the various body parts that are important for singing. The connections were explicitly made to the roles that each of the parts played in singing. This body mapping activity was followed by techniques in release of constriction and differentiated movement in the larynx, breathing and support and vocal resonance (Bagnall & McCulloch, 2005;Chapman, 2006; Estill, 1996; Kayes, 2004; Miller, 1986; Reid, 1975; Shewell, 2009).

The methods of data collection

Students wrote reflective journals during their three-year degree as part of their

study process. These reflections were collected at the end of each session and analysed. Observations from the teacher in class, written up in her own reflective teaching journal, were also a significant source of data collection, which complemented the perceptions of the students.

The reflective journal analysis provided insight into the student's perspective of their own singing development within a social context (Smith, 1995) and, as Denscombe (2003) points out, must be seen "as a version of things as seen by the writer, filtered through the writer's past experiences, own identity, own aspirations and own personality" (p. 213). The analysis of students' reflections had been successfully used in previous research and the practice of singing. For example, a study (Durrant & Varvarigou, 2008) found that reflection was integral to choral conducting students' professional development. The authors also observed that the student reflections gave valuable insight in the development and enhancement of the inclusion of a virtual learning environment in their choral conducting course (Durrant & Varvarigou, 2008).

The reflective journals were an authentic part of the teaching method developed in this study to assist the students to become self-regulated learners in their future development as singers. The students were asked to reflect back upon their learning process and make comments on how their singing was developing.

Data analysis procedures

The student journals were analysed at the end of each session. The journals were read carefully and any entries made by students thought to be relevant to the research were highlighted (Smith, 1995; Braun & Clarke, 2006). The highlighted texts were gathered together under different themes, which were further grouped under umbrella themes. The umbrella themes summarised and captured the quality of the participants' experience of the development of their singing. They were

complemented by teacher's observations captured in her notes. The themes then were mapped against the concepts of socio-cultural theory such as collaborative construction of learning and multiple perspectives; identity construction and change; reflection; scientific concepts and acquisition of these concepts. This article addresses the theme of scientific concepts and their acquisition by students.

Findings and Discussion

It became clear in the analysis of the journals that student reactions to the scientific concepts introduced were a recurring theme. There were 20 sub-themes which included concepts such as airflow/air-pressure, basic terms/understanding/lack of, breath control, laryngeal constriction, text books used, voice problems and these were all grouped under the umbrella of scientific concepts. The two sub-themes most frequently mentioned were breath control and laryngeal constriction and these became the basis for the discussion in this paper.

It took time for students to develop an understanding and acquire the introduced concepts as their own. Peer learning and reflection (Latukefu, 2009) were used to encourage a meta-cognitive development in students that would help them develop understanding of the scientific concepts. These concepts were also used by students to develop descriptors of quality about their singing so "discernment of quality becomes a key aspect of learning" (Sadler, 2008, p. 18).

It was important to be aware of the difference between teaching the skill of singing as such and teaching the scientific concepts of singing; that is understanding of how the skill operates and develops. When Vygotsky wrote about keeping instruction moving ahead of development he also distinguished between instruction that develops concepts and that which simply trains the child in specialised technical skills:

> This is the major role of instruction in development. This is

> what distinguishes the instruction of the child from the training of animals. This is also what distinguishes instruction of the child which is directed toward his full development from instruction in specialised, technical skills such as typing or riding a bicycle (Vygotsky, 1987, p. 212).

In relation to singing, it is argued that teaching singing should not be simply a training of the skill but should aim to develop a conceptual understanding of the theoretical basis of singing. This would allow students to guide their own learning in refining their singing techniques. According to Daniels (2007), ”if concept development is to be effective in the formation of scientific concepts, instruction must be designed to foster conscious awareness of conceptual form and structure and thereby allow for individual access and control over acquired scientific concepts” (p. 312).

The students found that body mapping gave them a conscious awareness of parts of their body they would use when singing. This awareness allowed for a greater access and control of the motor skills they were trying to achieve. The comment below, taken from a reflective journal, written after a class on body mapping, is typical:

> I found the concept of the inner working of my body and to actively recognise where they are and what they do to control various parts was an aspect of singing that I had rarely thought of before now. This whole body engagement has put singing in a different perspective for me. I must first understand the whole body and its mechanics so I can be aware of where things are and what they do so I can control them.

Another excerpt from a student reflective journal showed that he found body mapping to be very useful because he was able to transfer the scientific concepts he was learning about his body to other acting subjects:

> The body mapping was useful and immediately transferable because now when given instructions by various teachers, I am much more readily able to visualise what they are asking me to do in relation to what my body is required to do.

The following section presents two examples of spontaneous concepts which, when linked to scientific concepts, increase students' understanding so that they develop singing consciously and systematically.

Example 1: Breathing

A good example of a spontaneous concept paving the way for the scientific concept is breathing in singing. All singing students know how to breathe, however at an early stage of their singing they may be unaware that this act of breathing can be a controlled action. Voluntary control over breath, in time, leads to more vocal development. As students embed a more systematic and organised way of thinking into something they do unconsciously, the skill transforms into a conscious and controlled concept that can be transferred to other situations or songs. In Vygotsky's words, "mastering a higher level in the realm of scientific concepts also raises the level of spontaneous concepts. Once the child has achieved consciousness and control in one kind of concept, all of the previously formed concepts are reconstructed accordingly" (Vygotsky, 1986, p. 191-192).

Teaching new scientific concepts needed to be grounded in the corresponding spontaneous concepts from the start. It was important, in the context of the singing class, to remind students that they already knew how to breathe and that they just needed to incorporate different strategies into an action that they were

familiar with. Scientific concepts about breathing, in the form of body mapping (Conable, 2000), were introduced to singing students. The students began to understand what it meant to embed these more systematic concepts into an action that they do without thinking.

Some students had already had a variety of previous learning singing experiences when they entered the course and many of them reported on misconceptions they held. A first year student after her first class on breathing for singing wrote:

> I have always been told to use my diaphragm when singing. I was also told to stick my stomach out so that they would know I was properly using my diaphragm. It was good to have my misconceptions corrected.

The student was happy her previous knowledge had been corrected, but she found it difficult to combine her everyday concepts of singing with the scientific concepts taught in class. She felt instead that she had to replace old concepts with new ones. She commented:

> I found that it was tricky to rid myself of my previous experiences when learning and practicing this new breathing technique. I caught myself pushing my stomach out in the beginning. When using this new breathing technique for singing I found that I had more breath with which to finish each line.

Interestingly, another student had the same prior misconception. She commented that in class she started to become aware that if she could control the action of breathing it would enhance her ability to control the phrases of a song. She also noticed that she had to practice the newly acquired approach. She wrote:

> After studying the diagrams and information in Conable's (2000) 'The Structures and Movement of Breathing', I have found it much easier to maintain breath, support and control. In the past I have actually found it quite painful as I attempted to push out my stomach as far as possible. This action has been resolved as I am now simply using an excursion of the ribs and controlling the intercostals muscles between them. This outward movement of the free moving ribs allows the diaphragm to descend and expand horizontally and correct awareness of this movement will allow me to maintain control and support for my breathing. Today I have begun to practice the way to control that action. …when singing I need to ensure I am aware of this action so as to enhance its outcome in relation to particular phrases of song.

An important characteristic of scientific concepts is their transferability. In the following excerpt from a student reflective journal, the student began to understand the techniques taught in class. He was really excited when he incorporated the new techniques into a performance of his band outside of the singing class. This was a great example of a student finding that introducing scientific concepts into something he was doing already was helpful. He wrote in his journal:

> My voice was stronger, richer and more lively than our last gig. I was constantly aware of how I was using my voice and it greatly added to my performance. I ventured even further at times, throwing glottal pops into songs and experimenting with venturing from one extreme of my pitch to the other, swooping from my chest voice to my head voice. I am very pleased with where my vocal practice is at the moment and hope that it will

> continue in this vein. To summarise what I find to be the most valuable aspect of my singing progress and current practice is an increasingly deeper and more detailed awareness of my voice and my singing, which is become more instinctive.

The above example demonstrates that the introduced scientific concept of breathing put the old skill into a new perspective, which allowed for establishment of new connections and the transferability of this concept to a different context.

One first year student wrote about a breathing class in which she developed great insight into what was needed for her to improve her breathing. This insight came partly from body mapping work where she learnt about breathing joints in the back and partly from modeling of breathing by the teacher. She wrote:

> L [the lecturer] allowed each student to place their hands either side of her ribs to demonstrate the excursion of her ribs while she breathed in and out so that we could have a better understanding of the concept. I found it incredible to feel how much L's ribs moved when she breathed in and out. I have had over ten years of instruction to breathe into my diaphragm. I have never been encouraged to breathe into my breathing joints, and I didn't even know that they existed until this lesson, so I am very eager to employ these techniques, which are new to me.

The above examples are characteristic to the rest of the participants who all found the newly taught approach to breathing through body mapping exciting and immediately useful.

Example 2: Throat tension

Another example of spontaneous concept meeting scientific concept occurs when students experience throat tension while singing. Conable (2000) describes a common misconception which is characteristic to spontaneous concepts in singing and sound production:

> The common and very destructive confusion concerning the location of the trachea and oesophagus and the function of the pharyngeal muscles is often accompanied by a misunderstanding of sound, which is that sound is a substance, something that a singer may, for instance, "project". Singers with substance fantasies are prone to use the food-moving apparatus to sing. (Conable, 2000, p. 24)

It was noted in the singing classes that the students tended to think of their throats as one large hole into which food is put in, air breathed in and sound "projected" out. The following excerpt from the teaching journal describes what happened in class one day when the concept of breathing air without interference from the pharyngeal muscles was pointed out:

> We were talking in class about the image of projecting the voice, which Conable (2000) warns can be quite misleading. Quite a few of the students in the class felt that they used their pharyngeal muscles to help get the sound out. They also discussed how difficult it is to think of the throat as being divided into two different pipes, one for swallowing food and the other for air to move freely in and out of. Instead they mostly tended to just think of their throat as one hole in which everything happened. Martin [pseudonyms are used] got up to sing and admitted gleefully that he felt he harboured substance

> fantasies when he sang. The students love this phrase of Conable's. He said however that he was going to really try and address this and I am looking forward to seeing if anything changes in his singing and if he does manage to bring this concept into his thinking.

The introduction of the scientific concept of moving air cleanly and without the help of the pharyngeal muscles in the throat made Martin reconsider the everyday concepts that he held about singing. He wrote:

> The first obvious improvement was, for me, a recalibration of sensual awareness to the structures of the larynx. It was particularly well observed by my vocal coaches that my projection of sound was unnecessarily forceful, and that my perception of 'creating song' was causing volatility of breath and vocal strain. And so, when asked to detail my vocal development for this session, I will admit to a notable lack of confidence in the consistency of my technique, but I remain obstinately positive. My policy of addressing the inconsistencies between sensation and function has previously been limited to basic practical awareness and an informal self-reflection. I am sure that if I consult some further anatomical diagrams I can begin to reintroduce physiological fact into my singing practice, strictly opposed to the vague guesswork that is based on singing mythology.

Interestingly, Martin referred to the limitations of his previous understanding as "guess work" and "myth". The process of applying the new concepts was not easy for Martin, but he seemed confident that he could improve his singing by using the newly acquired physiological knowledge as a self-guide.

Martin was eager to further his understanding by reading about scientific concepts. He incorporated excerpts from what he was reading into his reflective journal entry. He wrote:

> I have recently begun to appreciate the theory of sound and how it can be applied in practical ways to dispel past illusions, previous singing mythologies that once compelled me to push sound and throw it outwards, as if it were from the oesophagus. Voice is actually created in the larynx by mucosal waves, "A rapid closing and opening of the vocal folds produce the 'sound signal'". (Kayes 3) It travels in a sound wave, a pressure-wave of colliding air particles, which over distance become clustered or spaced. If a clear, unconstricted voice was to be measured in terms of speed and pressure it would be graphed as a lovely, even, periodic, sine wave. The pitch of this note can then measured by changes in pressure or frequency (Hz), the higher the pitch, the higher the change in pressure. Furthermore, "the vocal folds also produce a range of other frequencies above the fundamental" (Kayes 4); this is called harmonics, an elementary quality of sound. In a practical sense, voice theory provides an understanding of how laryngeal constriction prevents the symmetrical replication of frequency, a state that makes for considerable problems with pitch. This also brought me to realise the difference between *'sound'* and *'noise'*. *'Sound'* merely boosts specific parts of a sound wave to achieve dynamic control, *'noise'*, however, is an aperiodic wave of widely randomised, inaudible energy. This generation of *'noise'* is one detrimental side effect to my 'substance fantasies'. I hope

> that this issue may soon be reconciled.

This example shows that Martin was impressed with the scientific concepts taught in the class. He continued individual reading on the subject, which allowed him to take his understanding to "ever increasing levels of sophistication" (Wertsch, 2007, p. 191).

Using scientific knowledge in an attempt to solve a vocal problem is the beginning of understanding the "meaning and functional significance of the sign forms" (Daniels, 2007; Wertsch, 2007, p. 186). The following excerpt from a student's reflective journal (entered after a lesson in the first half of her second year of the course) shows how she started to use scientific knowledge to try and solve a vocal problem.

> Janice Chapman and Ron Morris discuss the three uses of valves in the voice: breathy, where the vocal folds aren't meeting properly, a balance between vocal fold closure and sub-glottal air pressure and "Hyper adducted" where the vocal folds are pressed too tightly together and there is not enough sub-glottal air pressure (62). The latter is what I think I may unintentionally do when singing louder as L suggested and it is good to have a sense of what is happening from an anatomical standpoint. By understanding things in this way and having a clear sense of why a sound is produced the way it is; I can get a clear mental picture and know what I have to do to stop it.

Even though scientific concepts were being explicitly taught to all the students, it took each student time to make sense of these scientific concepts. They needed to connect them to their unique experiences thus allowing the scientific and spontaneous concepts to merge. Students required an individual approach to assist them in making meaning of the theory. Below is an example of how the use of a

humorous imagery helped a student to make sense of the scientific concept that she straggled to grasp. The teacher wrote in her journal:

> I was working in class with Tracey who is one of my more capable students and has a good voice, but somehow after 2 years has not managed to improve her tone as much as I would have expected. I know that she has a good grasp of the theory, but somehow it has not transferred into the physical act of singing. I decided to give her a rather tasteless image of breathing through her bottom as she was singing and allow the breath to completely fill her pelvis, lower back, ribs so that they expand and fill with air. We joked about how after all my lectures to them about being scientifically correct all of a sudden I was using imagery that was about as unscientific as you can get. Then she closed her eyes and used the imagery and the entire class was blown away at the change in her voice. It was resonant, balanced and huge! Even she looked shocked. She said that for the first time singing felt easy.

According to Shewell, ”using images in any voice work is fine, so long as the student has an adequate sense of the physical reality of voice production to avoid damage and safely liberate new vocal power” (Shewell, 2009, p. 8). The observations of students’ reactions in class in the present study suggest that, students learn at their own pace and a variety of pedagogical techniques need to be used to assist the students in making individual meaning of the scientific concepts. It is important to acknowledge the different ways and styles of learning to which students relate and this could be an interesting study as continuation of the present research. There is a distinct body of research which can guide such study (Gregorac, 1982; Marton, 2007; Reid, 2001; Vermunt, 2007). Phenomenological

research was used by Gregorac (1982) to develop a tool to assist with identifying an individual's natural means of mediation and transaction. Marton (2007) developed variation theory to illustrate the importance of using different ways to deal with subject matter for different students. Reid (2001) discussed the variations in the levels of learning in tertiary music students and highlighted the importance of developing learning environments that assist in developing the students' expertise as learners.

Discussion and Further Research

The present study demonstrated that teaching the students scientific concepts of singing affected both their singing performance and their ability to learn in a positive way. Not only did they become more skilful and self-confident in their singing, but also they acquired the tools for further independent learning. There was evidence in student reflections that the acquiring of scientific concepts brought about a change in their identity construction as singers (Latukefu, 2009). The introduction of scientific concepts and the integration of them into the creative practice of singing gave students the ability to reflect critically, problem solve and self-regulate in further self-development of their singing ability. Self-regulated learners "see themselves as agents of their own behaviour, they believe learning is a proactive process, they are self-motivated and they use strategies that enable them to achieve desired academic results" (Montalvo & Torres, 2004, p. 4). Without possessing scientific concepts the students are completely reliant on their teachers to give them positive or negative feedback on their own performance.

The results indicated that the scientific concepts were learnt at an individual pace and they required time and conscious effort for their development. Some students found the body mapping and the scientific knowledge of how the body works when breathing for singing immediately useful and started to use this knowledge straight away to improve their singing in areas outside of the course

such as singing in a band or a production. Others, especially some who had had previous singing training, found it more difficult to challenge their preconceived notions of how to breathe and sing. Nevertheless, the students reported improvement when they understood the mechanics of breathing and had mapped the position of the lungs, diaphragm and ribs.

Not all the students found it easy to challenge the preconceived ideas that they held about how to sing and the journals were a useful tool in which they discussed these issues. They tended to reject their spontaneous concepts when misconceptions were discovered. However, instead of having to totally accept or reject a position, students in a socio-cultural environment were encouraged to engage in a dialogue of co-construction with the teacher. The authority of the teacher was apparent from her expertise in the area, but the student perspective in constructing meaning was considered crucial in the learning process. This is where the mingling of scientific concepts with everyday concepts can occur.

One of the greatest strength of traditional singing teaching is that no singing teacher would attempt to teach singing in a scholastic verbal mode. It is of vital importance that this is maintained and precautions need to be taken that teaching of scientific concepts does not turn into an attempt to directly transmit the knowledge to the students. It is crucial to integrate the scientific concepts into the authentic act of singing.

This integration of theory and practice in which students are combining their own practical experience with the practical knowledge of their teacher and the scientific theoretical concepts of singing means that students have three important sources to learn from (Vermunt, 2007).

Modeling of scientific concepts by the teacher has proved to be quite effective, as in the example of the student who was amazed at the insight she gained about breathing by feeling her teacher's ribs move when she inhaled.

Vygotsky called this the Zone of Proximal Development (ZPD; Vygotsky, 1978) which promotes the idea of novices performing a range of tasks in collaboration with, and assistance of an expert. The emphasis is on the shared understanding between the expert and novice and the eventual transformation of assisted performance into that of independent and self-supported learning.

The experience in singing class was that imagery is also a powerful teaching tool when combined with scientific knowledge. This concurs with findings by Marton (2007) that, learning to discern the critical features of concepts is a crucial form of learning. Discernment means first experiencing variation and these variations should be experienced simultaneously. Combining scientific concepts with imagery and metaphor helps students experience variation simultaneously (Marton, 2007). The scientific concepts stay the same, but the interpretation of how these concepts are applied in practice varies according to how students interpret the imagery.

Conclusion

This study demonstrates that it is helpful for students' self-regulation of singing when they understand how their voice works scientifically in relation to their bodies. The reflective journals that students wrote showed that once they had this knowledge they were more likely to develop their own strategies that would help them transfer the theory into practice. The study also found that the students did not always grasp the scientific concepts straight away. This is an expected path in the development of scientific concepts. The students gained a deeper understanding of meaning in relation to their singing as they progressed with their study and their own self-initiated practice.

The study substantiates the conclusion that scientific concepts of singing should become part of the students' toolbox that helps develop their singing by making meaning of what they are experiencing kinaesthetically and aurally while

they sing. ”Vygotsky argued that the systematic, organized, and hierarchical thinking that he associated with scientific concepts becomes gradually embedded in every day referents and, therefore, achieves a general sense in the contextual richness of everyday thought” (Daniels, 2007, p. 311).

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Chapter 7
CONCLUSION

The conclusion to the study focuses on the implications, for practitioners and future researchers, of socio-cultural theory in the teaching and learning of singing. The thesis followed the compilation format and each of the articles included contains its own review of relevant literature. These include alternative models of learning singing as well as other relevant research in the areas of music education. The literature suggests that while there is a body of work that exists on different technical models of singing, almost all the studies assumed that students were taught via the traditional master-apprentice model that exists in conservatoires. The focus of this study was to analyse the development of singing in students and discover the kinds of strategies they develop in an environment transformed by Vygotskian theories of learning. In addition to this, documentation of the process and design show the evolution of the model. This chapter begins with a brief discussion, which addresses the research questions as well as how the aims of the study were met.

The Questions

When a series of events changed the way I taught singing, questions of standards of learning in the new class environment bothered me and I formulated a series of

questions that I felt were important to investigate in order to understand better how students learnt singing in a non-traditional learning model. Following the steps indicated by design-research methodology I chose a socio-cultural theoretical framework and used the theories of Vygotksy to inform the design of the class environment and curriculum. From this reflection on theory combined with my own bewilderment at having to invent a new model of learning singing came my central question which was: What learning strategies do students develop in a socio-cultural pedagogical environment? Related to this central question I formulated four sub-questions that reflected the pedagogical interventions I proposed to carry out. These were; what role does reflection play in developing students' singing?; how do singers transform their spontaneous concepts of singing to scientific concepts ; what is the process involved in the creation of classroom environments in which the critical discernment of quality becomes a key aspect of learning ; what effect does changing the role of the singer in the learning process have on the culture of the course and graduate qualities such as reflection, critical thinking and responsibility?

I followed the stages recommended by design-research methodology in relation to evaluation and refinement of interventions with constant reflection back to socio-cultural theories in order to analyse these questions. Through the use of Interpretative Phenomenological Analysis I began a detailed case-by-case analysis,in order to examine in detail the perceptions and understandings of the specific group studied. By interpreting the data through constant reflection on the theories of social constructivism I evolved explanations from the data in the forms of educational or design principles and this was one of the primary aims of the research. In the four articles included as part of the compilation I explored in detail each of the sub-questions and my conclusions in each of these studies assisted with the development of the design principles. In relation to sub-question 1, what role

does reflection play in developing students' singing? I found that through the reflective journals students demonstrated that their writing assisted them in thinking and problem solving, which is consistent with Vygotsky's understanding of the development of language (1978). The journals provided an opportunity for students to solve a problem by thinking about the solution, carry out the solution through the activity of singing and then refine the solution if necessary.

Sub-question 2 asked how singers transform their spontaneous concepts of singing to scientific concepts. The study demonstrated that teaching the students scientific concepts of singing affected both their singing performance and their ability to learn in a positive way. Not only did they become more skilful and self-confident in their singing, but also they acquired the tools for further independent learning. The introduction of scientific concepts and the integration of them into the creative practice of singing gave students the ability to reflect critically, problem solve and self-regulate in further self-development of their singing ability.

Sub-question 3 was concerned with what process was involved in the creation of classroom environments in which the critical discernment of quality becomes a key aspect of learning? This was answered in the design of an intervention relating to peer assessment where students were required to interact with descriptors of quality, which they had designed and which described great singing. The process took a year of interaction and collaboration with students in order to come up with a design for implementation and evaluation, and the report of this research provides a coherent account of this project in *Research Studies in Music Education.*

Sub-question 4 asked what effect changing the role of the singer in the learning process has on the culture of the course and graduate qualities such as reflection, critical thinking and responsibility. The results show that students became agents of their own assessment activities by having to take more responsibility for

marking other students, which led to them taking more responsibility for their own assessment. The process of having to think critically about other people encouraged students to reflect critically on their own practice and how effective it was, which is precisely the kind of graduate quality students need in order to keep learning after graduation.

Instead of being passive participants in assessment they became proactive in the process and this brought about changes in individuals who started to recognise other students' ability to perform well and gave them criteria they could apply to their own singing.

The aims of the research were to develop educational principles, based on empirical evidence, of how students learn singing. This included designing an environment that encouraged self-regulated learning through peer interaction and teacher collaboration. The design of the model required constant evaluation of interventions and refinement. Design-based research methodology was employed for this purpose. The first step in the design process was to become familiar with the field and this was achieved through a review of academic literature related to singing and music education, attendance at conferences, membership of organizations such as the Australian National Association of Teaching Singing and the Australian Voice Association and participation in professional development workshops related to the teaching of singing. The field revealed that there was hardly any empirical research existing on how singing students learn other than in a master-apprentice or one-to-one approach. This study has attempted to fill the gap in the literature on how students learn using a model that is not the master-apprentice one. In addition to this, the study has contributed to academic knowledge on the role socio-cultural theory can play in the learning of singing, through the development of education and design principles.

One of the assumptions that contributed to the development of the model was the benefit to be had from peer learning and the introduction of scientific concepts. These assumptions have been continuously supported by the current study, which suggests that if the environment is arranged in a manner that encourages students to learn from each other, the students find it a helpful strategy. Once the students realise the benefit of peer learning in class they build on it outside the classroom as well.

Following the steps suggested by design-based research methodology, interventions were designed using a Vygotskian theoretical framework. The conceptual elements of Vygotsky's work that were utilised in this process were- the zone of proximal development, mediated learning, scientific and everyday concepts, co-construction of knowledge, inter-mental to intra-mental learning and transformation of practical activity. The students were consulted throughout the process and subject evaluations and reflective journals collected at the end of each session were used to refine the next iteration of the design. In design-based research methodology the evaluation and testing of solutions in practice is a crucial step in the process. The theoretical framework combined with design-research methodology helped to achieve the aims of the first phase of the research which was to develop a model of learning using a socio-cultural approach.

The main focus in the development of the singing model was the authentic environment of the classroom. For ethical reasons it was not possible to have a group of students who received the intervention, while others in the cohort did not. Nor was it feasible to try and develop a laboratory-based experiment to test how students learned singing. The context and the interventions had to reflect reality, but at the same time it was important to have a theoretical framework to reflect back on so that the interventions were guided. The continuous analysis of data and documentation of process that was required from the methodology means that the

findings are inextricably linked to the research process and so any other singing teacher wanting to use the theoretical principles that emerged from the design can see how they evolved. This is important because not every singing course will ever be exactly the same. The circumstances will always be slightly different, but this methodology allows for multiple variations as part of the authentic development.

Design-based research methodology uses conjectured theories on which to base interventions. I had to find a theoretical framework with which to design the interventions and so part of the argument of this thesis has been that Vygotsky provided a way to respond to the central aim of my study. In particular utilising his writings on scientific and everyday concepts and how children construct knowledge first inter-psychologically and then intra-psychologically helped me conceptualise the design of interventions that were used.

In the article, 'Scientific concepts in singing: do they belong in a student toolbox of learning?' Vygotsky's theory of concept formation was vital when considering the relationship between the everyday concepts that students bring to class about how to breathe and the scientific concepts that I teach about breathing for singing. The notion that, while everyday and scientific concepts are very different, both are essential for learning helped to shape my attitude to teaching scientific concepts in a way that combined the students' everyday concepts with the new scientific ones.

'Peer learning and reflection: Strategies developed by vocal students in a transforming tertiary setting,' investigated transformation of the teaching environment from the traditional master-apprentice approach to one of peer learning and collaboration. To do this I turned to Vygotsky's theory of the zone of proximal development, which relates strongly to inter-mental processes that occur between the teacher and student or between experienced students and their less advanced peers, before they internalise learning. The main aspiration of teaching in

the ZPD is to see students become self-directed and capable of learning after graduation (Falchikov, 2007; Vialle et al, 2005). This aim became an important focus of the study in general and was the background also for the article, 'Peer assessment in tertiary level singing: Changing and shaping culture through social interaction.'

In summary, Vygotskian theories combined with design-based research methodology helped to achieve the original aim of developing a model of singing underpinned by socio-cultural theories of learning.

How can the research help other practitioners?

The nature of a socio-cultural approach, combined with design -based research methodology means that certain design principles emerged from the constant reflection back to theory during iterations of the design. These principles are transferable to other contexts even if the local context is different from the one where the principles were developed.

For inexperienced teachers the socio-cultural approach provides insights into strategies that students develop for learning and this in turn can act as a framework in which they can organise the content of their singing teaching. For more experienced teachers who find themselves having to adjust the way they teach because of economic pressures or as part of curriculum renewal and review, the theoretic concepts of how students can learn using a different model of teaching will be useful as they develop their own models of learning suitable to their local context. Significance of the practical implications is evidenced by the author being invited to contribute to a book on vocal pedagogy, which has a wide dissemination amongst singing teachers (see appendix 2).

The following section will discuss what principles emerged from the study and how they are transferable to other conservatoire or studio situations.

Design principles of a socio-cultural environment of teaching and learning singing

Design principle 1

Students self-regulate their own singing when they understand how their voice works scientifically in relation to their bodies.

Students may not always grasp the scientific concepts of singing immediately, but they gain a deeper understanding of meaning in relation to their singing as they progress with their study.

Unlike models of learning singing, which are often prescriptive of content, this model allows practitioners flexibility to choose scientific concepts of singing that they will teach their students. As a teacher/researcher I am aware that singing teachers may adjust the types of scientific concepts they choose to teach depending on the student learning style and the context. The design principle in this case is not the type of scientific concept a teacher should use, but the fact that scientific concepts themselves can become a mediating tool for learning if combined with the everyday concepts students hold about singing. The analysis of data collected from student journals clearly showed how students developed their understanding of the scientific concepts as long as they were taught as part of the authentic learning experience and not detached from it.

The students in the study benefited from the introduction of scientific concepts, in line with studies by Callaghan (1998), Chapman (2006), Timmermans et al (2004). They also distinguished, through their reflections on how they were using the new knowledge in other contexts, that they were achieving what Magill (2007) described as learning (change in the capability of a person to perform a skill; it must be inferred from a relatively permanent improvement in performance as a result of practice or experience), rather than performance (the behavioural act of executing a skill at a specific time and in a specific situation).

Design principle 2

Interaction with peers motivates reflection and further learning

The dominance of the one-to-one lesson in the conservatoire means that students do not get as much chance to learn from each other as they do using a socio-cultural approach. This study repeatedly supported Vygotsky's theory that learning happens first inter-psychologically and then intra-psychologically. Students in the study placed a high value on watching the development of others and learning with them. While advocating for the continued need for one-to-one lessons in the conservatoire, this study questioned whether at an undergraduate level, a balance between group teaching of concepts that are basic for vocal development and one-to-one lessons, was more beneficial because of the peer learning culture that develops. Nielsen (2004) advocated more use of peer learning and the findings in this study supported this by showing that learning in classes helped students develop a language in which they could discuss their singing and these discussions continued outside of class and helped with constructing a deeper understanding of the practice of singing. The finding of this study disagreed with Kamin et al (2007) that peer learning was beneficial in some contexts, but not in others and that the classical music context was perhaps not a place for peer learning. Instead this study found that the advanced singers in the course who all studied classical music, benefited as much from the peer learning culture of the course as did the non-classical singers. The study also found that when the "Master Class" became the main vehicle for teaching, students had a completely different audience reaction to when the Master Class was a one off special event. Creech et al (2009) wrote about students feeling that there was no value in being an audience member because "they did not understand what they could learn from other people's performances or that the points raised were not necessarily relevant to the audience" (p.325) . Vicarious reinforcement (Bandura, 1971) where the students used the observed

experience of others to modify their own behaviour was commented on constantly in the student reflective journals in the present study.

Design principle 3

Transformation of practical activity through reflection benefits learning

This study demonstrated that formal reflection by students about their vocal development and why things were happening assisted students in solving problems. It did this by providing them with an opportunity to diagnose a problem, think of a solution, carry out the solution through their practice and then refine the solution if necessary. Acquiring these meta-cognitive skills helps students to become more self-regulated learners and improves their practice as they can think about what they need to do in order to improve (Parncutt, 2007). Some students used the reflections as a way of bringing together all the different perspectives about the voice that they were getting and working out which ones they preferred. The findings about transformation of practical activity through reflection supported Reid's (2001) five levels of conceptions of learning in which, teacher modeling, reflection, co-constructed learning and different perspectives are transformed into high-level communication and performance.

Design principle 4

Singing students must be able to critically discern quality in singing

A socio-cultural approach to learning singing encourages students to become better self-regulated learners (Montalvo & Torres, 2004) capable of continuing with their learning after graduation (Falchikov, 2007). In order to achieve this, students must be capable of thinking critically about their own singing. The introduction of peer assessment into the course was a strategy to try and encourage students to think about what constituted quality singing in others, which in turn made them think about what constituted quality singing in them-selves. The main benefit that the

students perceived from the exercise was that it helped them to reflect on their own practice by having to make the effort to interact with the criteria given in order to properly assess a peer. Peer assessment may not be the only way to have students develop this ability to discern quality in themselves and others, but it was an effective strategy in the local context of a higher education degree. Students co-constructed the assessment-related knowledge, which they were able to appropriate as their own and apply to self-assessment. The importance of student participation in the process of developing assessment criteria was a consistent theme in the literature on peer assessment in music courses (Blom & Poole, 2004; Daniel, 2004; Hunter & Russ, 1996; Searby & Ewers, 1997) and the finding of this study in relation to peer assessment was that the more ownership the students had of the assessment task the more seriously they took it. The study resonates with the findings by Purcell (2005) that peer and self-assessment provided a means of triangulation of personal theory that students held about their singing and that this affected students' perceptions of their learning.

The students also felt that an assessment like this, in which they were expected to make a critical appraisal of the quality of a peer's performance, was, authentic and relevant for their immediate future. There was a tradition of graduates from the course setting up their own companies and many of the students were aware of this and had already auditioned for parts in the plays being mounted by their peers. This acknowledgement by students of the importance of gaining skills in critical appraisal of quality made them keen to take the assessment very seriously. Research carried out by Trevitt and Pettigrove (1995) also found that students thought peer assessment to be relevant to their future careers.

Design principle 5

Multiple perspectives are important for construction of learning singing

There is a culture of protection and possession of students that exists in many conservatoires (Jorgenson, 2000). This can be exacerbated by the master-apprentice style of teaching and often as a student and also a teacher I have heard other teachers say that it is just too confusing for students to have different teachers tell them different things. Forderhase (1994) found this a common comment in his study on vocal team teaching. The present study supported the case for multiple perspectives being extremely helpful to singing students, especially when the other teacher is a spoken voice teacher. The different approaches and perspectives that the teachers brought to their work meant that students transferred the vocal work that they were doing from one class to the next with good results.

Contributions to knowledge

In the process of developing design principles of learning underpinned by a socio-cultural approach I have made the following contributions to knowledge:

First, I have interpreted and applied Vygotsky's theories of ZPD, concept formation, mediated learning, co-construction of knowledge and transformation of practical activity to young adults learning singing. This was achieved following the steps suggested by design-based research methodology and involved transforming the learning environment from a traditional one-to-one singing studio to small group classes in which reflection and critical evaluation by students for students became more dominant than one-to-one imparting of knowledge by the teacher. In this environment students were encouraged to transform the practical activity of singing into activity that was informed by scientific concepts and which required them to self-regulate their singing using tools provided.

Second, this study offers a means to conceptualise how socio-cultural theories have affected individuals' singing development and construction of identity. This was achieved through the analysis of the students' own narratives, on how they construct their singing, from when they enter the course to graduation. These narratives contained information about how students interacted with others to develop knowledge, how important they thought good vocal health and technique was for their singing development and what constitutes great singing and how they often gained confidence in their singing as the course progressed and they became more informed. The student narratives also offered an explanation of how students modified these meanings over time in order to develop their singing. Through the development of design principles I have provided conceptual representation of the learning environment rather than a step by step model of how to teach singing.

Third, I have contributed to methodological research practices in singing by adapting design-based research methodology. Through my adoption and adaptation of this methodology I have devised a means that other singing researchers can work with their students in developing models of singing that reflect onto educational theories of learning.

Future research

In future research I would like to further explore the connection made by Holland et al (2007) between Vygotsky's writings on identity and those of the theoretical school of symbolic interactionism. I have included (Appendix 2) a published book chapter that hints at future research in which I aim to use socio-cultural theory to examine issues of identity in students entering conservatoire. At the moment my research as a practising opera singer and the research I carry out as a teacher are quite distinct. I want to draw these together. The chapter (appendix 2) begins with a discussion about issues of interpretation and performance and how I approached

the interpretation of Asian and Pacific influenced music when my own training had been entirely from the European tradition of *bel canto* and Western operatic traditions. The paper goes on to investigate issues of construction of identity that arose during the preparation for performance of two compositions commissioned for the 2008 Aurora festival and discusses the struggle I had when asked to 'dredge up' my pacific island cultural background, in order to successfully perform the songs, when I had spent so many years trying to eradicate this from my identity as a western trained opera singer. This experience of having teachers get rid of any traces of my Pacific heritage has made me aware of how little we try and find out about what our students bring to us. I particularly like a quote from Holland et al (2007) where they explain how Vygotsky's "developmental perspective is provocative for theorizing about how persons construct their personal versions of the social identities that mediate their behavior and interpretations of the world" (Holland & Lachotte, 2007, p. 109). However, I am also interested in re-interpreting Vygotsky's notion of everyday and scientific concepts and how they should merge. This is important in a setting where Western operatic traditions dominate what is acceptable. Part of my own teaching practice now involves merging of students' everyday concepts of who they are and what they bring from their own backgrounds with assumptions that I hold about how to sing, rather than submerging student identities.

Holland et al (2007) also give advice to researchers about how to start investigating identity from a symbolic interactionist point of view. Using a quote from Penuel and Wertsch, "study identity in local activity settings where participants are actively engaged in forming their identities to examine the cultural and historical resources for identity formation as empowering and constraining tools for identity formation s; [and] to take mediated action as a unit of analysis"

(1995, p. 83 in Holland & Lachotte, 2007, p. 114) . This is the form that my research has taken up till now and would be a logical continuation.

Another interesting question that has come out of this study is the role that formal reflective writing plays in the students' development. The reflections that students wrote often contain reported speech in which they discussed concepts or changes that had been suggested to them in class either by other students or by the teacher. Wertsch (2001) makes the point that in reported speech one hears two or more voices which "come into contact, interanimate and infiltrate one another in various ways" (Wertsch, 2001, p. 229). This is directly related to Vygotsky's concept of learning as co-construction of knowledge between the teacher and learner or between learners and which is later internalised by the learner. During the analysis of reflective journals of students I became aware that at the beginning of first year there was a tendency for students to simply report on what had happened in class, but by 3rd year they were inserting themselves into the report. Future research could investigate how students are using these reflections as tools for learning.

In any attempt at curriculum review or renewal it is tempting to simply change or add curriculum content. The current study has shown the value of aligning assessment and content to the qualities that we would expect from our graduates. More research could be done in this area of graduate qualities and musicians. In 2009 I attended a youth opera festival in the Netherlands where many debates were held about the role of conservatoire for modern musicians. A clarinetist attending the festival who works as a successful performing musician, although not with a symphony orchestra, swore that, the only thing he really learnt to do well at conservatoire was play a beautiful 'e' on his clarinet. It is alarming to think that this is his perception of learning at conservatoire. Now he is part of an independent wind ensemble that performs contemporary music, designs and

implements music educational programs for schools and devises and performs original works for children. I would hate to think that I might have students attending conferences and complaining that all they learnt in their degree was how to sing a perfect “e”. Perhaps if we as teachers can identify what qualities we want our singers to have when they finish their under-graduate degrees and align our teaching with those qualities we will be preparing our singers much better for life after graduation.

In one of the articles I wrote at the beginning of this study I told the story of my interview for the job I now hold and how I had no idea how to answer one of the interviewers when she asked me which pedagogues have influenced me the most. While there are many who have influenced the content of my teaching over the years, I am now confident that I could answer that question by saying that Vygotsky’s notions on how children learn have been a great influence on my teaching and will continue to be so in the future.

Design-based research must make the extra step towards conceptualising. I am thankful to my supervisors Dr Irina Verenikina and Associate Professor Wilma Vialle for encouraging me to keep analysing not just describing. The study has taught me the value of collaboration with students. I realise that most of the good ideas have come from the students and I will be eternally grateful towards them for their critiques of my teaching, reflections and great sense of fun that they bring to class.

I would like to conclude this thesis with a reflective statement from a student. Her narrative speaks confidently and resonantly about her vocal development and includes a brief insight into how the class environment was beneficial for her.

Singing reflective statement

How has my singing developed throughout the course?

First and fore mostly- I compare my singing now, to when I auditioned four years ago and the change in vocal quality is astounding:

Release of constriction has been a major issue for me- and I feel that I can now after 3 years finally do it.

Classical singing exercises- I believe this has strengthened my work as my range has extended (Vaccai work: especially the last assessment where I noticed a major difference) and I am gaining much more fine motor control.

How effective are the strategies I have developed?

I believe that I am now becoming much more confident due to the fact that I am not so afraid of standing up and work shopping ideas and suggestions from Lotte and the class. Critical feedback from class has helped us all improve so much (the last assessment proved that). I now have much more confidence that I can sing songs successfully than at the beginning of the three year course. I am my own best/worst critic, I can identify the problems I have when rehearsing each song. I can only continue to develop and improve my emerging practice. Thank you Lotte, for your help.

Appendix 1

Accepted for publication as: Latukefu, L. (2010). Breaking through the frames of custom: A socio-cultural approach to singing. In S. Harrison (Ed.), Perspective on Teaching Singing: Australian Vocal Pedagogues Sing Their Voices. Bowen Hills: Australian Academic Press

Abstract

This chapter will present a summary of the results from a series of studies carried out between 2003 and 2009 in the Faculty of Creative Arts at the University of Wollongong. These studies investigate a model of learning singing underpinned by the socio-cultural theories of Vygotsky. A design-based research methodology was adopted in order to carry out the aims and purpose of the research. The conclusions reached in each of the studies informed the design of the socio-cultural model of singing and also the development of educational principles that can act as a framework in which, singing teachers can organise the content of their singing teaching. For teachers who are interested in curriculum renewal and review, the theoretic concepts of how students can learn using a different model of teaching will be useful as they develop their own models of learning suitable to their local context. This chapter also reflects on the desirability of aligning teaching and assessment with qualities such as reflection, critical thinking, responsibility and self-regulated learning in students.

Keywords: socio-cultural, graduate qualities, singing pedagogy

Appendix 1

Introduction

Music Conservatoires and universities are increasingly finding themselves under pressure from funding bodies to increase student-to-staff ratios. In a recent example, the Victorian College of the Arts in Australia is being forced to consider a new curriculum for 2011, which might include adopting a less intensive teaching model and increasing student-to-staff ratios. Their Faculty Dean, Sharman Pretty spoke to the media about the shift in curriculum as a way of "contextualising training in the world of higher education that would 'empower' students' long-term learning and make them more competitive" (Trounson, 2009, p. 26). There is often a lack of alignment between a conservatoire's curriculum and pedagogical approach and the learning outcomes relevant to a workforce destination. "Put bluntly, is our curriculum and traditional pedagogy setting students up for failure as 'lifelong' learners?" (McWilliam, Carey, Draper, & Lebler, 2006, p. 26)

Historically, the predominant relationship between teacher and student in vocal instruction has been described as a master-apprentice relationship, where the master is looked at as a role model and a source of identification for the student, and where the dominating mode of student learning is imitation (Jorgenson, 2000). Despite the negative connotations of imitation as a learning style, research by Davidson et al (2007) concludes that one-to-one teaching empowers student learning more easily than other approaches and should be encouraged. They qualify this however by acknowledging that,

> cultural and political agendas of various state education systems will impact upon how this teaching and learning develops in its various physical environments, and in whether the lessons remain one-to-one or

> group-focused, and how much responsibility is left with the student and his or her peers (Davidson & Jordan, 2007, p. 742).

Even more challenging of the master-apprentice model is a European study exploring one-to-one teaching in an academy of music. It took Foucault's concept of discursive practice as a point of departure and found that academies of music are characterised by the extensive individualisation of teaching and learning available to the students and a high degree of specialisation on the part of the staff and students. Despite the individualised organisation, however, academy teaching practices are highly institutional in their character. "The teaching is heavily bounded in the historical practices of music performance" (Nerland, 2007, p. 399). It is this bind with traditional teaching practices, especially the master-apprentice model that makes it difficult to bring about change in the conservatoire.

Conclusions presented in this chapter, in the form of educational principles, are the result of a series of studies that were carried out in a seven-year period from 2003-2009 at the University of Wollongong (Latukefu, 2007, 2009, 2010). The conclusions were reached based on empirical evidence of how students learn singing, using Vygotskian notions of the zone of proximal development, mediated learning, scientific and everyday concepts, co-construction of knowledge, inter-mental to intra-mental learning and transformation of practical activity.

Context and Background

I teach singing in a faculty of creative arts at a non-metropolitan university in Australia. The pressure applied from my university faculty to change traditional one-to-one teaching to group-focused was the beginning of the present study. We had to think of different methods of delivering teaching to greater numbers of students. In the process we considered the kinds of graduate qualities that we would expect our students to possess at the end of their under-graduate degree and these qualities informed the design of the interventions and the environment.

In 2001 the Dean of my faculty announced that the music department in which I taught singing would be amalgamated with the theatre department. There had been hints that this move was afoot, but once the decision was made, change was swift. It began at auditions where students were chosen for their acting skills and their singing potential rather than their polished singing skills. The biggest change however occurred in the mode of teaching.

Overnight my one-to-one lessons became small groups. I also had to cope with differing levels of skill and experience in students. Some students were interested in extending their voices and learning classically, others just wanted to be able to sing competently. The students were demanding, ambitious and desperate to work. They also were used to working in small groups from their acting training. I realised that if I were to survive I had to make changes to the way I was teaching. By necessity rather than choice I began to investigate educational theories of learning that might help me develop better ways of teaching singing in a non-traditional way.

Looking for alternatives

In the UK a study that explored changes made to teaching practices at Conservatoires (Davidson & Smith, 1997) noted that the level of change at conservatoires has been very slow. A report made in 1965 showed that many conservatoires in the UK offered similar curricula from their opening (some of them had opened in the nineteenth century) up to the date of the report's publication.

In the USA, Vogel (1976) and Holden (2002) showed that there was something to be gained by introducing peer involvement to the teaching process. Holden (2002) argued that group lessons meant that teachers did not have to repeat themselves over and over and would therefore feel more motivated and invigorated in their teaching. He did not mention the inter-mental benefits (Vygotsky, 1986) of

students learning from each other. Vogel (1976) discovered that student learning benefited from the atmosphere created by "so many thoughts, concepts, and suggestions flying about" (p. 21). Forderhase (2007) carried out a study that investigated teacher attitudes to team teaching. Seventy-one percent of teachers surveyed said that they would co-teach a student if the other teacher and the student agreed. However in the comment section provided in the questionnaire and filled out by 50 of 203 respondents, the largest group of comments showed teacher concern that exposure to more than one vocal teacher at a time would lead to confusion from students.

All of the studies mentioned dealt with an important aspect of my own research that encouraged peer learning and multiple perspectives. An article challenging conservatoires to be open to innovative pedagogical possibilities and alternative models of learning, opened up issues around the values and limitations of traditional pedagogy for students (McWilliam, Carey, Draper, & Lebler, 2006). The researchers documented a non-traditional instrumental learning model, which emulated the learning practices of popular musicians in the broader community. A structured reflective journal and an evaluative self-reflection described as a distinctive feature of the program acted to 'add a layer of formal knowledge' (McWilliam, Carey, Draper, & Lebler, 2006, p. 29). Peer learning was valued over a master-apprentice learning model and the program was very successful judging by student evaluations. This study provided useful data for developing the learning model in the present study as it successfully incorporated socio-cultural practices such as peer learning, co-constructed learning, authentic learning and reflection.

Kamin et.al (2007) investigated the psychological, social and environmental influences on the talent development process of non-classical musicians. Of most interest in relation to my own study were their findings on peer influence. The writers found that for non-classical musicians peer influence was

exclusively positive, but both positive and negative for classical musicians. They suggested that this needed to be considered within the context of the domain if it is to be used.

Riggs (2006) developed a philosophical model for studio instruction based on flow theory, developed and researched by Mihalyi Csikszentmihalyi (1997). The model Riggs proposed, was concerned with development of the "whole" student to serve as a 'philosophical supplement to studio instructors who may not have received much training in developmental issues, educational theories, or related facets of the psychology of learning and performance' (Riggs, 2006, p. 176). Riggs suggests that applied studio instructors move away from the master-apprentice model to one where the teacher is a co-constructor of knowledge. In response to Riggs' paper, Freer (2006) proposes situating her model 'in a constructivist paradigm where instructional scaffolding becomes a dominant component of the teaching and learning process' (Freer, 2006, p. 227).

Chapman (2006) used the term holistic singing to describe her philosophy of singing. She developed a teaching model that provided useful tools for singing teachers. At the core of the nucleus or satellite are components she considers to be basic building blocks for the voice. They are primal sound, postural alignment, breathing and support. Her model developed from a linear one in which one part led to the next, to a model positioned in a way that allows the components to be revisited frequently from any other component. The components also interacted with each other directly, which corresponded to Vygotsky's ideas of learning being an organic and interdependent whole rather than separate components (Liu & Mathews, 2005).

All of these proposals for alternative models had components that could be related to the present study. Many of them were concerned with content knowledge rather than the process of learning, others did not relate solutions to a theoretical

framework Reeves (2000). Finally none of the studies produced educational principles that I could use to develop my own model.

Theoretical Framework

There were certain key concepts that I used in development of the singing model. Vygotsky's (1978) theory of ZPD or Zone of Proximal Development promotes the idea of a novice performing a range of tasks that they cannot accomplish on their own, but in collaboration with an expert are able to achieve. The emphasis is on the collaboration and eventual shared understanding that develops between the expert and novice. To reach the learner's ZPD, the expert's assistance should be slightly above the level of the learner's independent performance, but provide enough support to enable them to complete the task (Vialle, Lysaght, & Verenikina, 2005). According to Daniels (2008), Vygotsky discussed the ZPD in terms of assessment and instruction. Vygotsky was interested in assessing the ways in which learners make progress. He endorsed the notion that formal instruction, which moves ahead of the student's development, is in itself a source of development (Daniels, 2008).

> The formal aspect of each school subject is that in which the influence of instruction on development is realized. Instruction would be completely unnecessary if it merely utilized what had already matured in the developmental process, if it were not itself a source of development. (Vygotsky, 1987, p. 212, cited in Daniels, 2008)

Vygotsky's theory of concept formation is related to the theoretical view of learning as a socially and culturally mediated process, which brings together the individual experience of the learner and the wealth of the theoretical knowledge accumulated in society (Vygotsky, 1986). *Spontaneous or everyday concepts* refer to the individual practice; they are the result of spontaneous, empirical "generalization of everyday personalised experience in the absence of systematic instruction" (Karpov, 2003, p. 171). They are rich in personalised experience and well suited to working in a particular context. However, everyday concepts are inextricably tied to a learner's concrete experience; they are unsystematic, not

easily transferable and not conscious. They are likely to include misconceptions and are "often wrong" (Karpov, 2003, p. 171).

Scientific concepts are acquired consciously, according to a certain system of formal instruction. They are generalised, systematic and are abstracted from concrete experience, and therefore are easily transferable from one context to another (Vygotsky, 1986). This formal instruction however relies on co-operation and collaboration with the teacher:

> The development of the scientific concept, a phenomenon that occurs as part of the educational process, constitutes a unique form of systematic cooperation between the teacher and the child. The maturation of the child's higher mental functions occurs in this co-operative process, that is, it occurs through the adult's assistance and participation. (Vygotsky, 1987, p. 168 cited in Daniels, 2008)

The acquisition of scientific concepts helps to mediate students' thinking and problem solving and restructure their spontaneous concepts (Karpov, 2003). Student reflective writing about their practice is the process in which speech and practical activity converge in the development of intellect (Vygotsky, 1978).

> In the process of solving a task the child is able to include stimuli that do not lie within the immediate visual field. Using words (one class of such stimuli) to create a specific plan, the child achieves a much broader range of activity, applying as *tools* not only those objects that lie near at hand, *but searching for and preparing such stimuli as can be useful in the solution of the task, and planning future actions*…Thus, with the help of speech children, unlike apes, acquire the capacity to be both the subjects and objects of their own behaviour. The speaking child has the ability to direct his attention in a dynamic way. (Vygotsky, 1978, p. 26, p. 36)

Singing teachers are concerned with individual development and although "Vygotsky's (1978) 'general genetic law of cultural development' asserts the primacy of social in development" (Daniels, 2008, p. 12) it also shows that he was concerned with individual development. While it is the interchange that occurs between individuals in the group that contributes to the learning there is also a change that happens as the individual internalises the information. "*An interpersonal process is transformed into an intrapersonal one.* Every function in

the child's cultural development appears twice: first, on the social level, and later, on the individual level; first *between* people (*interpsychological*) and then *inside* the child (*intrapsychological*)" (Vygotsky, 1978, p. 57).

Methodology

Singing is a skill that develops over time. In order to understand this development we must observe the transitions that occur in individuals as they become more adept. One of the fundamental assumptions of a socio-cultural approach according to Wertsch (1991) is that what is described and explained is human action. A component of the socio-cultural approach is to analyse the process. "Genetic analysis in Vygotsky's approach is motivated by the assumption that it is possible to understand many aspects of mental functioning only if one understands their origin and the transitions they have undergone" (Wertsch, 1991, p. 19).

Vygotsky maintained that proper understanding of the role which the learning environment plays in the student's development must be approached from the point of view of the relationship which exists between the student and his or her environment at different stages of development (van der Veer & Valsiner, 1994).

This study adopted a Design-based research methodology in order to carry out the aims and purpose of the research. Design-based research, also known as development research, is concerned with developing broad models of how humans think, know, act and learn (Barab & Squire, 2004). The paradigm evolved, according to Sandoval and Bell (2004), as a way to study innovative learning environments in classroom settings. The theory of design-based research evolved from the work of educational psychologists and also researchers involved in educational technology learning, who were concerned about bridging the gap between experimentation in laboratory studies and the messiness of the classroom (Bannan-Ritland, 2003; Barab & Squire, 2004; Brown, 2004; Collins, 1992;

Design - Based Research Collective, 2003; Hoadley, 2004; Kelly, 2003; McKenny, Nieveen, & van den Akker, 2006; Reeves, 2000).

Design-based research methodology is defined beautifully by Wang and Hannafin (2005) as "a systematic but flexible methodology aimed to improve educational practices through iterative analysis, design, development, and implementation, based on collaboration among researchers and practitioners in real-world settings and leading to contextually-sensitive design principles and theories" (pp. 6-7).

The main focus in the development of the present singing model was the authentic environment of the classroom. For ethical reasons it was not possible to have a control group of students who did not receive the intervention, nor was it feasible to try and develop a laboratory-based experiment to test how students learned singing. The context and the interventions had to reflect reality, but at the same time it was important to have a theoretical framework to reflect back on so that the interventions were guided. The continuous analysis of data and documentation of process that was required from the methodology means that the findings are inextricably linked to the research process and so any other singing teacher wanting to use the theoretical principles that emerged from the design can see how they evolved. This is important because not every singing course will ever be exactly the same. The circumstances will always be slightly different, but this methodology allows for multiple variables as part of the authentic development.

The students were consulted throughout the process and subject evaluations and reflective journals collected at the end of each session were used to refine the next iteration of the design. Part of the process in design-based research methodology was to use conjectured theories on which to base the interventions. I had to find a theoretical framework with which to design the interventions. Vygotsky provided a way to respond to the central aim of my study. In particular

utilising his writings on scientific and everyday concepts and how children construct knowledge first inter-psychologically and then intra-psychologically helped me conceptualise the design of interventions that were used.

Interventions using a socio-cultural approach

In the following section I will briefly describe the interventions that were introduced into the singing course. Reflection and self-assessment were introduced to students in order that they "view changes in their immediate situation from the point of view of past activities, and they can act in the present from the viewpoint of the future" (Vygotsky, 1978, p. 36). Reflection engages learners in a meta-cognitive thinking process (Burwell, 2005). This meta-cognition helps them to think about what they need to do to improve (Parncutt, 2007). Students that acquire these meta-cognitive skills become more in charge of their own learning, thus becoming self-regulated learners. Students at UOW made weekly reflections on singing development, but it soon became clear that hardly any students were journaling weekly, and the students were instead writing the entire journal the night before it was due in class. The journaling assignment was changed to reflect this and the students wrote a retrospective statement of their vocal development and the strategies they developed over the session (Latukefu, 2009).

One of the assumptions that contributed to the interventions was the benefit to be had from peer learning. The environment of the class was organised so that the teacher was a co-constructor with other students in the development of singing rather than an authoritative figure with knowledge to transfer. In Latukefu (2009), I investigated transformation of the teaching environment from the traditional master-apprentice approach to one of peer learning and collaboration. To do this I turned to Vygotsky's theory of the zone of proximal development, which relates strongly to inter-mental processes that occur between the teacher and

student or between experienced students and their less advanced peers, before they internalise learning.

Vygotsky's theory of concept formation was vital when considering the relationship between the everyday concepts that students bring to class about how to sing and the scientific concepts that I teach. Vygotsky emphasized that both scientific and everyday concepts are essential for learning. He described the elaborate relationship between experienced-based and scientific concepts as follows.

> In working its slow way upward, an everyday concept clears a path for the scientific concepts and its downward development. It creates a series of structures necessary for the evolution of the concepts more primitive, elementary aspects, which give it body and vitality. Scientific concepts, in turn, supply structures for the upward development of the child's spontaneous concepts toward conscious and deliberate use (Vygotsky, 1986, p. 194).

The pedagogical views of a singing teacher will have a great deal of influence on how vocal training is transmitted. How we transmit this knowledge is crucial and Vygotsky argued that direct transmission of scientific concepts was not the best method.

> Pedagogical experience demonstrates that direct instruction in concepts is impossible. It is pedagogically fruitless. The teacher who attempts to use this approach achieves nothing, but a mindless learning of works, an empty verbalism that stimulates or imitates the presence of concepts in the child. Under these conditions, the child learns not the concept but the word, and this word is taken over by the child through memory rather than thought. Such knowledge turns out to be inadequate in any meaningful application (Vygotsky, 1987, p. 170).

Despite the fact that teaching of vocal physiology has become reasonably common practice in Australia, there is on-going debate amongst teachers on whether, and how, scientific concepts should be taught to enhance learning singing. I heard evidence of this when I attended a music conference in London in 2009 and witnessed a discussion by a panel of singing teachers from the Guild Hall as to whether or not there is value in introducing scientific concepts to students. Some

of the teachers argued that while it was necessary for them as teachers to understand scientific concepts, it was not necessary for students to be taught this information. In the present study, scientific concepts were introduced into the singing class as part of the authentic act of learning singing. Class time was spent drawing bodies on butcher paper and inserting body parts that were necessary for singing. Explicit connection was made to the roles each part played in singing.

Universities in Australia have all participated in the development of graduate qualities that describe the distinctive qualities of a graduate of the particular university. Peer assessment (Latukefu, 2010) was introduced as a means to encourage individual development of graduate qualities such as critical thinking and responsibility in students. The literature tells us that peer involvement in assessment has potential to encourage learning and develop assessment skills that will last a lifetime (Boud, 1989; Boud et al, 1999; Falchikov, 2007). A review of literature and analysis of current practice, found that there were relatively few music institutions that had formal peer assessment as part of their programs. Reservations about over-marking by students, extra workloads for staff and problems that arose when different instruments and genres were involved, were held by those that did use peer assessment (Blom& Poole, 2004; Daniel, 2004; Hunter& Russ, 1996; Searby & Ewers, 1997).

In the present study students participated in developing assessment criteria that described what they considered to be high quality singing. These criteria were then used to peer assess. The performances were compared only to the assessment criteria and not to other students or to general improvement of a student. Students formed panels and the three students in the panel assessed another student in the class. Performances were discussed and marked and written feedback was provided to the performer by the panel. The criteria developed by the students were used as a guide and the panel was asked to mark holistically rather than dividing up the

criteria and giving each part a mark. Panel feedback was moderated by a staff member before being passed on to the assessed student. Student assessors were given support in the weeks leading up to the peer assessment through modeling or prompting by the teacher, but were not marked on how they assessed.

Data collection and analysis

The planned interventions were introduced over a few years and Table 1 provides a summary of the timeframe. Each intervention was treated as a research project and data collected in a variety of ways (see table 2). There were 3 different cohorts of students who took part in the research. The first cohort commenced in 2006, the second in 2008 and the third in 2009. The total number of participants who began the study was 90 however some students dropped out of the course so the numbers fluctuated. The students were all completing an undergraduate tertiary performance course. They were a mixed group of acting students, male and female and some had prior singing training while others did not.

Year	**Intervention**	**Purpose**
2003	Pilot study	Investigate student reaction to being taught both singing and spoken voice as part of performer training.
2004	Transformation of classroom environment.	To encourage social interaction amongst students.
2005	Introduction of reflective journals	To encourage critical thinking and informal self-assessment.
2006	Formal introduction of scientific concepts into the spoken voice and singing voice course.	To encourage students to self-regulate their own singing when they understand how their voice works scientifically in relation to their bodies.
2008	Formal introduction of peer assessment.	To encourage students to be able to judge quality in singing and foster a sense of responsibility for others.

Table 1: Summary of timeframe of study

Appendix 1

A variety of instruments were used to collect data. Table 2 describes each of these instruments, its purpose and how the data was collected. The instruments consisted of student reflective journals, questionnaires, focus groups, input from other staff members and teacher and subject evaluations administered by the University. The questionnaires contained opened and closed questions as well as Likert scales and the teacher/ subject evaluations were administered anonymously by the University as part of their own regular evaluations and the results provided to me at the end of each session. Teacher evaluations carried out at the end of each session were a major influence on refinements that were made to the model. The input from other staff members came in the form of discussions in meetings about the subject development.

Instrument	**Purpose of instrument**	**How data was collected**
Student and teacher reflective journals	To gain an understanding of undergraduate singing students' perceptions of and interpretations of their bodily and singing experiences and the meanings, which they assigned them as well as the changes that happened. To add teacher perceptions and interpretations of the same experiences.	The journals were collected twice in a session from January 2006 till November 2009. Two full cohorts of students were involved in the collection and all gave permission for their reflections to be analysed.
Teacher's notes taken in class of student assessments and performances Were these teacher's notes?	To keep a record of ongoing vocal development in order to compare teacher perceptions with students' perceptions of the same time.	Detailed notes of students' performances and assessments were collected for analysis.
Teacher/Subject evaluations	These were anonymous and therefore students could write freely and with honesty about the performance of the teacher and the course.	University administered evaluations at the end of each session, with results provided to the teacher. Questions used Likert scales as well as open ended questions for comment by students
Document Reviews	Documents provided a context for the model being	Documents included subject outlines from 2000 until 2007

	developed.	as well as comparison of courses teaching music or drama around Australia
Planning meetings with other staff members	Used to reflect on and assess the progress of students and plan content of classes. Also to seek advice on matters pertaining to the theoretical framework.	Held at the beginning and end of the university session.
Questionnaires	To find out music education background and any existing vocal problems as well as what students found useful about the innovations and any suggestions they had for improving them or dropping them	Administered throughout the study and at the end of projects.
Focus groups	The groups were used to collaborate with students on the development of descriptors of quality that could be used in peer assessment	Discussions in focus groups were recorded and analysed.
Pilot study and pilot interviews	These informed the research questions being investigated in the present study and assisted with the final wording of interview questions in the main study	Carried out at the beginning of the study
Submission of manuscripts to international and national peer reviewed journals.	The critical feedback from reviewers shaped both the manuscripts and the next iteration of the design.	Each research project was documented and submitted for publication. Comments from reviewers were used to inform changes in the design.

Table 2: Instruments used to collect data

This study used Interpretative Phenomenological Analysis (IPA) to arrange and analyse the data from journals, questionnaires and class notes. IPA has its origins in health psychology (Fade, 2004) however it has been adapted and used in music research (Bailey & Davidson, 2005; Coimbra, Davidson, & Kokotsaki, 2001; Holmes, 2005; Sansom, 2005). When the students at UOW write in their reflective journals about how their singing is developing they are interpreting and modifying

the meaning of things that are happening to themselves (Blumer, 1969). The ontological standpoint of the present study is that it is important to understand students' perceptions of and interpretations of their bodily and singing experiences and the meanings, which they assign them.

IPA is an interpretation by the researcher of the participants experience while at the same time an attempt to capture the quality and texture of the individual experience (Willig, 2001). By interpreting the data through constant reflection on the theories of social constructivism it is possible to evolve explanations from the data in the forms of models or narrative (Chapman & Smith, 2002). Theories can be developed for the shared meanings that a group of individuals attach to the experience of developing their singing in a socio-cultural environment and a case study approach can be used to develop an in-depth description of just one individual's experience (Fade, 2004). For example; the content of all the reflective journals was analysed individually and common themes emerging were noted and used to develop shared meanings for the group. These journals were an authentic part of the teaching method developed in the study to assist students to become self-regulated learners. Students reflected upon their learning process and made comments on how their singing was developing. The journals were read carefully and any entries thought to be relevant to the research were highlighted. The themes that emerged summarised and captured the quality of the participants' experience of the singing development. The themes were then mapped against concepts of socio-cultural theory such as scientific concepts. Journals were also analysed looking at individual development of students over the three years in the course. This singing development, which included identity construction was documented and used for case studies (Latukefu, 2009).

How can the research help other practitioners?

The nature of a socio-cultural approach combined with development-research methodology means that certain educational principles emerge from the constant reflection back to theory. These principles are transferable to other contexts even if the local context is different from the one where the principles were developed. The following section will discuss what principles emerged from the series of studies.

Students self-regulate their own singing when they understand how their voice works scientifically in relation to their bodies.

It is already common practice in Australia to include scientific concepts as part of a range of teaching strategies. This study continues to support this and add to the knowledge that transmission of these concepts is best in an authentic manner and in combination with everyday concepts that students hold. The analysis of data collected from student journals showed how students developed their understanding of the scientific concepts as long as they were taught as part of the authentic learning experience not detached from it. The comment below, taken from a reflective journal, written after a class on body mapping, is typical:

> I found the concept of the inner working of my body and to actively recognise where they are and what they do to control various parts was an aspect of singing that I had rarely thought of before now. This whole body engagement has put singing in a different perspective for me. I must first understand the whole body and its mechanics so I can be aware of where things are and what they do so I can control them.

From a socio-cultural perspective, scientific concepts cannot be simply assimilated in a ready-made form. They must undergo development in order to obtain individual meaning (Vygotsky, 1986). This development is carefully directed by the instructor in close connection to the individual characteristics of the learner. Unlike models of learning singing which are often prescriptive of content, this model allows practitioners flexibility to choose scientific concepts of singing that they will teach their students. As a teacher/researcher I am aware that singing teachers may adjust the types of scientific concepts they choose to teach depending

on the student learning style and the context. The design principle in this case is not the type of scientific concept a teacher should use, but the fact that scientific concepts themselves can become a mediative tool for learning if combined with the everyday concepts students hold about singing.

An important characteristic of scientific concepts is their transferability. In the following excerpt from a student reflective journal, the student was excited when he realised that introducing scientific concepts into something he was doing already was helpful. He wrote in his journal:

> My voice was stronger, richer and more lively than our last gig. I was constantly aware of how I was using my voice and it greatly added to my performance. I ventured even further at times, throwing glottal pops into songs and experimenting with venturing from one extreme of my pitch to the other, swooping from my chest voice to my head voice. To summarise what I find to be the most valuable aspect of my singing progress and current practice is an increasingly deeper and more detailed awareness of my voice and my singing, which is become more instinctive.

Another excerpt from a student reflective journal showed that she found body mapping to be very useful because she was able to transfer the scientific concepts she was learning about her body to other acting subjects:

The body mapping was useful and immediately transferable because now when given instructions by various teachers, I am much more readily able to visualise what they are asking me to do in relation to what my body is required to do.

Interaction with peers motivates reflection and further learning.

The dominance of the one-to-one lesson in the conservatoire means that students don't get as much chance to learn from each other as they do using a socio-cultural approach. Students in the study placed a high value on watching the development of others and learning with them. While advocating for the continued need for one-to-one lessons in the conservatoire (Latukefu, 2009), I questioned whether at an undergraduate level, a balance between group teaching of concepts that are basic for vocal development and one-to-one lessons, was more beneficial because of the peer learning culture that develops. Nielsen (2004) advocated more use of peer

learning and in the case of one student in the study it was clear that listening to other students who were at a similar level, but a little more advanced helped her hear things that were achievable. This is what she wrote:

> Every week in class I learn more about the amazing control singers have to have over their voices. The difference between the third years and us is just amazing and I can see that training and applying these techniques is quite a long term thing that will take many years but you will still always be improving (Latukefu, 2009, p. 129).

Transformation of practical activity through reflection benefits learning.

In Latukefu (2009), I demonstrated that formal reflection by students about their vocal development and why things were happening assisted students in solving problems. It did this by providing students with an opportunity to diagnose a problem, think of a solution, carry out the solution through their practice and then refine the solution if necessary. Acquiring these meta-cognitive skills helps students to become more self-regulated learners and improves their practice as they can think about what they need to do in order to improve (Parncutt, 2007). In two case studies carried out (Latukefu, 2009) the students used their reflective writing as a way to synthesize the different perspectives they were getting from books and other classes. In a third case, the student journal writing became much more detailed once he had mastered the terms in which to express himself.

Singing students must be able to critically discern quality in singing.

A socio-cultural approach to learning singing encourages students to become better self-regulated learners (Montalvo & Torres, 2004) capable of continuing with their learning after graduation (Falchikov, 2007). In order to achieve this, students must be capable of thinking critically about their own singing. The introduction of peer assessment into the course (Latukefu, 2010) was a strategy to try and encourage students to think about what constituted quality singing in others, which in turn made the students consider what constituted quality singing in themselves. Students completed a survey concerned with exploring their experience of peer

assessment. Results suggested (Latukefu, 2010) the main benefit the students perceived from the exercise was that it helped them to reflect on their own practice by having to make the effort to interact with the criteria given in order to properly assess a peer. A couple of responses from students were:

> "By assessing my classmates I found that during my assessment I was thinking critically and could therefore work to apply the things I had noticed lacking in previous assessments."
> "I liked the ability to be able to discuss as a panel why and how the performance of the singer worked. Playing the assessor gave me an understanding what are the standards and criteria I need to full fill (*sic*) to be able to perform well in my own performance."

Peer assessment may not be the only way that students develop this ability to discern quality in themselves and others, but it was an effective strategy in the local context of a higher education degree. Students co-constructed the assessment related knowledge, which they were able to appropriate as their own and apply to self-assessment (Latukefu, 2010).

Multiple perspectives are important for construction of learning singing.

There is a culture of protection and possession of students that exists in many conservatoires (Jorgenson, 2000). This is exacerbated by the master-apprentice style of teaching that takes place and many times as a student and also a teacher I have heard other teachers say that it is just too confusing for students to have different teachers tell them different things. Forderhase (1994) also found this a common comment in his study on vocal team teaching. In Latukefu (2007) I demonstrated how a socio-cultural approach supported the case for multiple perspectives being extremely helpful to singing students, especially when the other teacher was a spoken voice teacher. In my own teaching journal I describe an impromptu class visit from the voice teacher. It demonstrates a collegiality that contributed to helping with student learning.

> C (voice teacher) came to class today and worked with Barbara (pseudonyms are used). Barbara has a huge operatic sound, which is much more mature than you would expect from

> someone her age and shows some worrying signs of things not being quite right. There is creakiness in the sound and also a bit of a wobble. Her pitch is often flat and singing always seems like such an effort for her. This effort distracts from the performance. Also, she does not glide smoothly when changing pitch or register, but tends to have a rather lumpy line. Mostly she sings loudly and without a lot of vocal colour change. I can hear this and we have tried different strategies to try and improve, but nothing seems to stick. C. immediately asked her to stop trying to drop her larynx and instead sing using a soft twang. Barbara found this almost impossible at first, she could not sing softly and employ twang. Finally she got it and the change in her sound and performance was breath taking. For the first time she was able to sing freely, pitch was centered, there was no sign of wobble and she still projected beautifully. Also the creaky sound that was caused by pushing and therefore constricting disappeared altogether. She was able to concentrate on the meaning of the text and the character and it was the first time that her voice and the effort of producing her 'sound' was not a distraction to the audience. I had not thought of this as a strategy probably because my own opera training with low larynx position is so strong. I was really happy that C had been able to help her so easily and she did it in a way that did not threaten me at all. She worked as a speechie not a singing teacher and I think this was really thoughtful of her.

The different approaches and perspectives that the teachers brought to their work meant that students transferred the vocal work that they were doing from one class to the next with good results. A quote from one of the student's reflective journals showed how she was integrating the spoken voice work with the singing classes. She was transferring the vocal skills of anchoring, release of constriction and twang learnt in spoken voice class and applying them to her singing with what she perceived to be good results:

> I warmed up as usual and sang through two songs, Auf Eines Altes Bilt and Ave Maria. I practised using anchoring that we learned in spoken voice, particularly on the high notes, and found this quite difficult because of the isolations of the body required. While creating stability in the core of my body, I had to be careful to retain an open throat and avoid constriction. Also my breathing – while activating my back muscles, I had to be careful not to clench and strain my tummy muscles and keep my breath flow consistent. In spoken voice class we learnt about "twang" and practised it. L (singing teacher) was there and C (voice teacher) talked about using it in singing, just enough so as to create less strain on the voice, but so it doesn't turn nasal. The difference was amazing in our speaking voices and the ease with which volume was created by using natural twang was incredible (Latukefu, 2007 p. 12).

Who benefits from this knowledge?

For inexperienced teachers the socio-cultural approach provides insights into strategies that students develop for learning and this in turn can act as a framework in which, they can organise the content of their singing teaching. For more experienced teachers who find themselves having to adjust the way they teach because of economic pressures or as part of curriculum renewal and review, the theoretic concepts of how students can learn using a different model of teaching will be useful as they develop their own models of learning suitable to their local context.

Future research

In 2009 I attended a youth opera festival in the Netherlands where many debates were held about the role of conservatoire for modern musicians. A clarinetist attending the festival who works as a successful performing musician, although not with a symphony orchestra, swore that, the only thing he really learnt to do well at conservatoire was play a beautiful 'e' on his clarinet. It is alarming to think that this is his perception of learning at conservatoire. Now he is part of an independent wind ensemble that performs contemporary music, designs and implements music educational programs for schools and devises and performs original works for children. I would hate to think that I might have students attending conferences and complaining that all they learnt in their degree was how to sing a perfect "e". We teachers must identify realistically what qualities we want our singers to have when they finish their under-graduate degrees and align our teaching with those qualities. That way we will be preparing our singers much better to go out into the real world.

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Appendix 2

Published as: Latukefu, L. (2008). Learning contemporary P'ansori pieces by Atherton and Lee: a performer's perspective. In M. Atherton & B. Crossman (Eds.), *Music of the Spirit: Asian-Pacific Musical Identity* (pp. 174-183). Sydney, NSW: Australian Music Centre.

Introduction

Learning contemporary p'ansori pieces by Atherton and Lee: a performer's perspective

This paper aims to investigate issues that arose during the preparation for performance of two compositions commissioned for the 2008 Aurora festival: 'Chun-Hyang Ka', by Lee and 'Oku Ou Talanoa Mo Hoku Loto', by Atherton. Both of these pieces began with p'ansori performance as the basis on which to write their music. While Lee chose a traditional p'ansori story and incorporated rhythms and style typical of traditional p'ansori, Atherton maintained the p'ansori framework of singer and drummer on stage, but chose a poem from Tonga, which reflected my own background. The discussion considers four of the attributes identified by Shin Chae-hyo, a nineteenth century supporter and patron of Korean p'ansori, as necessary for p'ansori performances, namely: presence; narrative; vocal attainment and dramatic gestures (Auh, 2005) and considers how these attributes can be transferred to the contemporary songs of Lee and Atherton. It also explores, which vocal techniques used in traditional p'ansori singing might be employed by a singer trained in *bel canto* style of singing. Killick (2003) describes p'ansori singing style as '(ch'ang) a distinctly husky and emotionally intense vocal timbre and stylised speech (aniri)' (p.45). The vocal technique that produces the husky timbre is called *pressed-type* singing and while in European style singing the ventricular folds and true vocal folds vibrate, in certain styles of pressed singing the vocal folds only approximate, but do not vibrate thereby giving a rough pressed sound to the voice (Sakakibara, Imagawa, Niimi, and Osaka, 2003). I chose not to employ this technique in performing Lee and Atherton's songs but there were other vocal and musical techniques that were also common to p'ansori performances, such as *glissando* and *oscillation in pitch*, which I used. Finally the paper discusses some of the issues of interpretation and performance and how I approached the

interpretation of Asian and Pacific- influenced music when my own training had been entirely from the European tradition of *bel canto* and Western operatic traditions.

Attributes of Korean p'ansori singing

One of the early patrons of p'ansori music was the Korean musician, Shin Chae-hyo. He was a commoner whose family had managed to amass a fortune and he used his financial resources to patronise the p'ansori singers. He also directed performances, worked on p'ansori theory and revised p'ansori libretti (Pihl, 1994). It was Shin who identified and ranked the four major attributes[i] of a p'ansori singer in a poem he composed called Kwandae ka:

How delightful is the *kwangdae's* way of life,
But how truly difficult!
The first requirement for a kwandae is good looks,
The second is outstanding skill in narration,
And the third musical talent and dramatic ability.
Dramatic ability means to be full of life and grace:
Numerous changes in an instant-
At one minute a fairy, the next a ghost;
He'll make his audience laugh and cry-
The brave as well as the emotional, both men and women, old and young,
Dramatic ability is indeed the most difficult of all.
Musical talent means the ability to distinguish the five tones,
To manipulate the six pitches, and
To sing by means of voice control from the body.
This too is a hard thing to do.
Narrative skill means to tell a story as clearly as fine gold and beautiful jade,
To make it beautiful by embroidering it with flowers,
As if a pretty girl adorned with the seven treasures were to emerge from behind
A screen,
Or the full moon from behind a cloud;
To make (the audience) laugh with his eyes.

Good looks are inborn,
And can't be changed.
These are the requirements for *p'ansori* singers.
(Kwandae Song in Pratt, 1987, pp. 103-4)

Presence was ranked first in the list of attributes. A p'ansori singer needed a commanding and effective stage presence, which caused Pihl (1994) to comment that Shin must have regarded the p'ansori performer as primarily an actor, and therefore the performance as having to be highly theatrical.

This gave some interesting hints about the need to develop the Lee and Atherton's pieces in a theatrical way. In both pieces there is only one performer and a percussionist so the theatricality must come from the interpretation of the character and the text, combined with the music. The distinction between the narrator and the character must also be made very clear. Both Lee and Atherton have maintained the framework of a narrator speaking and then a character singing.

In an experiment conducted by Davidson (1993) on visual perception of performance manner in solo instrumentalists, it was suggested that 'vision can be more informative than sound in the perceiver's understanding of the performer's expressive intentions (p.112). Any aid to the understanding of the performer's intentions is important when singing bilingually, which is the case in both Lee and Atherton's compositions. The use of gesture and facial expressions should assist the audience in understanding the songs. In a different research project that compared audio and audiovisual ratings of college level singers, researchers found that the audiovisual ratings were higher (Wapnick, Darrow, Kovacs, & Dalrymple, 1997). P'ansori calls for a visually expressive performance and in the compositions by Lee and Atherton there is an implicit agreement with this by the choice of text and the style of writing.

Narrative, the second ranked attribute according to Shin, must be elegant and clear. In traditional p'ansori it can take up to four or five hours for the narrative to enfold. The imagery Shin uses in his poem, such as the full moon emerging from behind a cloud, emphasizes this luxury of

time in which the story can be slowly and teasingly unfolded. While Lee chose to use a traditional p'ansori story, the narrative had to be distilled into three very short scenes. From the perspective of the performer, this made it difficult to find ways of telling the story without making it sound too simplistic. Atherton's use of poetry and images meant that the imagery could convey meaning to the audience in fewer words, but it also made it more difficult to dramatically communicate the meaning and intention of the piece. Both composers used the device of spoken voice in their compositions, Lee as a way of directing the narrative and Atherton in order to allow the non-Tongan speaking members of the audience access to the meaning of the sung text.

The last two requirements Shin had of a P'ansori singer were musical and dramatic talent. Shin advised that the performer needed, 'to sing by means of voice control from the body' (Pratt, 1987, p.251). This was a singing concept I understood well, as fine motor control of the throat mechanisms and engagement of the body in supporting sound are important whether using *pressed singing* or *bel canto* (Chapman, 2006; Kayes, 2004; Miller, 1986).

During the preparation of these pieces, I sought advice from Dr Myung-sook Auh of the University of New England. I had been reflecting in my performance journal:

> What will happen to the character of the P'ansori if I sing it as a trained opera singer? Yet if I don't bring that training to the piece what do I bring? I will need to explore different timbres with my voice that still draw on the training, but without sounding like a Western trained opera singer who has given no thought to the origin of P'ansori. Bruce and Jiyun keep telling me that it is a contemporary piece influenced by P'ansori, but not a copy of P'ansori, so does this in fact give me a warrant to do what I like? Or am I bringing power and authority from western traditions to try and usurp the Korean flavour as if it is less worthy than what I consider to be normal? How will a Korean person react to this? (Latukefu, 2007, December)

Dr Auh reassured me that the piece did not warrant a P'ansori singer and warned me not to attempt to sing in a P'ansori style. She explained that the P'ansori style of pressed singing is a specialised technique that takes many years to learn properly and that a singer attempting to imitate pressed

singing without correct training would simply end up with a damaged voice. The Korean author Chong No-sik in his biographical sketches frequently tells of 'learners who not only sang themselves hoarse, but who vocalized in the wilderness or challenged the sound of a waterfall to produce voices of great power, often pushing themselves to the point of spitting up blood in the process' (Pihl, 1994, pp.104-105). The vocal technique that produces the husky timbre is called *pressed-type* singing and while in European style singing the ventricular folds and true vocal folds vibrate, in certain styles of pressed singing the vocal folds only approximate, but do not vibrate (Sakakibara, Imagawa, Niimi, and Osaka, 2003). Dr Auh played me a number of recordings of P'ansori singing and I could hear exactly what was meant by *pressed singing* style. However I also became aware, as I listened to the voices, that they possessed an incredible mastery of the fine motor skills that are required to perform so many extreme techniques in a manner that was flowing and lyrical as well as incredibly moving or funny. The vocal range was quite extensive and while in chest voice the voice often sounded hoarse or pressed, it would suddenly soar up into a beautiful head voice and then *glissando* down onto a long note that would oscillate between two notes in a manner I found entrancing. I thought that the *glissandos* and oscillation on long notes were something I could definitely introduce into my own singing of Lee's piece.

Vibration and oscillation of pitch can be achieved in two different ways. The first kind of vibration, is produced by the cricothyroid muscle and this, is the vibrato used in operatic singing. The second type of vibrato is intensity vibrato which is produced by variations of subglottal pressure that modulates the amplitude of the voice source (Edgerton, 2004). In the present case I chose to use a slow wide vibration using the pitch raising cricothyroid muscle in order to oscillate around a central note and even sometimes trying to broaden the vibrato enough to oscillate between two notes.

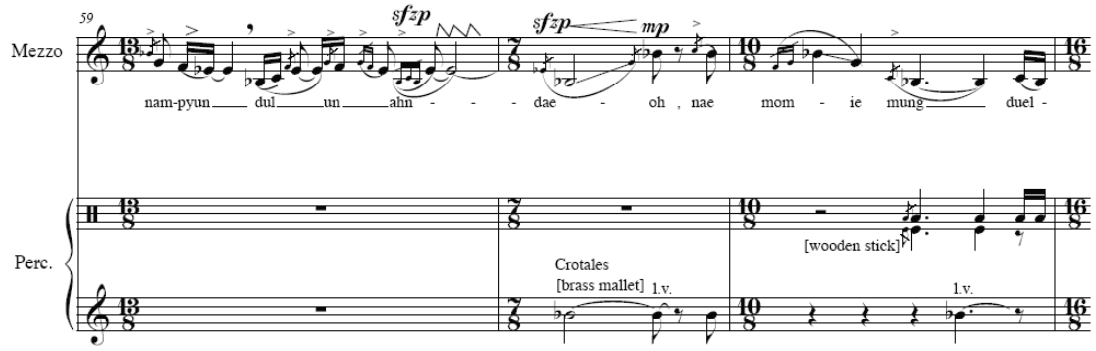
Dramatic challenges came from the quick changes required to move between the role of narrator and character or between speaker and singer and will be discussed in further detail later on in the paper.

Ch'un-Hyang Ka by Jy-un Lee

Lee's song is an interpretation of the p'ansori music to which she was exposed in Korea as a child. Lee followed the traditional p'ansori arrangement of solo singer plus drummer, alternating between spoken text to develop the story line and songs that are sung by the character Ch'un-Hyang. There was some discussion between Lee and myself as to how to achieve more drama in the spoken text and still be able to use the rhythms that she wanted in the spoken sections. I did not expect an Australian audience to have prior knowledge of the story, or the emotional attachment to it, in the same way as a Korean audience for whom this plot is very familiar. We compromised, with Lee writing out some rhythms she thought were essential for the p'ansori feel and with me incorporating these throughout the narrative sections wherever appropriate. Claire Edwards who collaborated as percussionist in the performance and recording of the piece also found that this was a section where she could improvise, using the framework and instruments suggested in the score, in order to emphasise the dramatic narrative. This improvisation enabled me to use the declamatory style of the p'ansori narrator in some parts and then switch to a more naturalistic narrative style in order to increase the emotional intensity of the story.

Lee's main rhythmic effect was the use of *acciaccaturas*, which makes the pulse seem unsteady and challenges the performer to continuously begin bars before the beat. She told me that she felt the acciaccaturas changed the "colour" of the notes and she loves to make use of them in her compositions. She said that the acciaccaturas were very typical of p'ansori technique and Korean music in general and suggested listening to Samulnori (Korean percussion) rhythms which use grace notes throughout. The acciaccaturas were very helpful in portraying how unbalanced Chun-Hyang felt throughout the entire piece. In my interpretation the acciaccaturas became a vehicle for conveying Chun-Hyang's loss of balance from her changing circumstances, particularly her emotional reactions to love, loss, relief and joy and the physical horror of torture (see Example 1).

Example 1 Jiyun Lee, *Ch'un-Hyang Ka* (Bars 59-61)—Acciacaturas



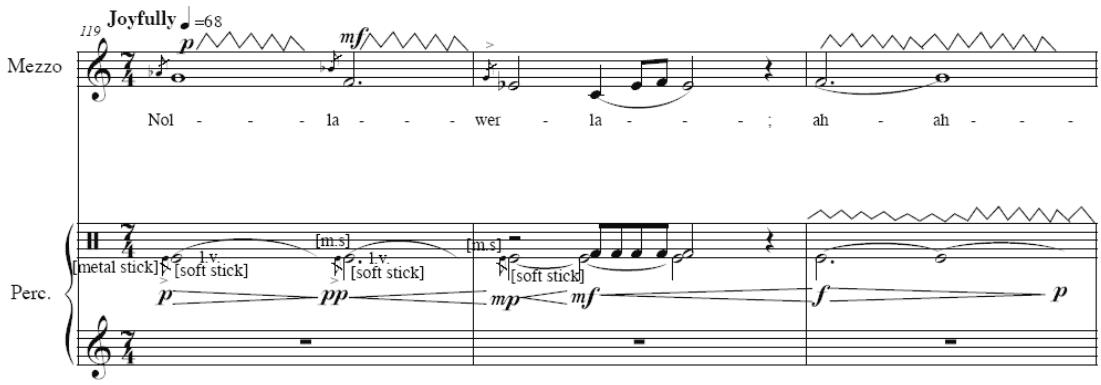
Lee's creative voice has a direct association with Korean culture, music, language and philosophy and she is adamant that her music expresses her cultural identity as a Korean-Australian. Her experience of playing Samulnori percussion at the Korean Catholic Church in Sydney has influenced her writing, but while there is an element of improvisation in the performance of traditional p'ansori, Lee was very precise in indicating the rhythmic notation. I found it difficult to keep to the strict rhythms and still manage to communicate the dramatic thought processes of the character. I wrote in my performance journal:

> Had my first rehearsal with Claire and Jiyun, which was a bit intimidating. I think I just expected that Claire would accommodate my being a bit loose with the rhythms so that the drama could shine through. Instead she absolutely expected me to be as rhythmically precise as she is. It really made me lift my game and the amazing thing was that as soon as I did that, Ji yun's rhythms and acciacaturas made the drama much more real than anything I was trying to do. (Latukefu, 2008, March)

The second section of the piece when Ch'un–Hyang was in gaol and being beaten for refusing to become the governor's concubine contains some very beautiful melodic phrases. Rather than singing them in a rich and beautiful tone, I made a choice that seemed appropriate to the text. The phrases became breathy and fractured, the sound of someone struggling to retain their integrity and love in the face of torture and beatings. Lee's reaction to this was very positive and she confirmed my own ideas that the piece needed to be theatrical and dramatic. She also liked the contrast that it made to the joyful section where I used techniques of oscillation and wide vibrato.

While Lee had indicated throughout the piece the need for use of wider vibrato, I felt that artistically it was more dramatic to save this till the final scene when Chun-Hyang was overcome with happiness at finding out Mong Yong was the new judge and she would not be sentenced to death (see Example 2). There is a feeling of wild uncontained joy that fills her broken and bloodied body and which can be expressed through the oscillation in pitch by using wide and expressive vibrato. I also chose to syncopate the rhythmic oscillation in order to give the sense of her emotions dancing. It was very satisfying to work closely with the composer and allow changes that we both agreed on, to occur organically in the piece.

Example 2 Jiyun Lee, *Ch'un-Hyang Ka* (Bars 119-121)—Oscillation Marking



Oku Ou Talanoa Mo Hoku Loto by Michael Atherton

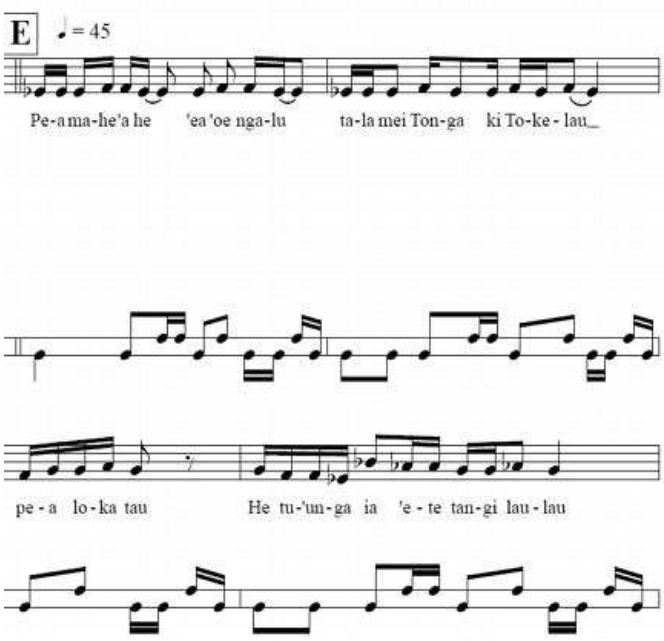
My involvement with Michael Atherton's composition began before it was written. This was a new experience as mostly I am presented with the completed piece and my work starts with its analysis and performance. Instead, in this instance there was some collaboration in the choice of the poem and discussion about whether or not to use Tongan poetry. Some parallels exist between Korean p'ansori traditions and Tongan oratory, which is the medium Tongans use to express extreme emotions. According to Kaeppler (1993), the task of the Tongan orator is to make people laugh and especially to weep. If we refer back to Shin's poem, he writes that one of the requirements of a good p'ansori singer is the ability to make the audience laugh or cry. Michael Atherton and I read through a range of Tongan poems in order to choose one that would be suitable for the composition and I

was immediately attracted to a poem that had a strong female character as the narrator. The poem composed by Okusi Mahina after the death of the Maori Queen celebrates, 'her unique royal trappings and great social achievements as an exceptional Maori heroine' (Mahina in Atherton, 2008).

One of my tasks as a performer is to use my imagination to embody the character of a piece that is to be performed. There are also life experiences that one has over time that may also contribute to the range of expression that is used. My personal background has provided me with multiple identities. I am part Tongan/Methodist, part German/Jewish. I was brought up in Papua New Guinea where I initially attended an experimental primary school, which included both Papua New Guinean and expatriate students. I am aware that my body and voice adapt according to the situation I am in. If I am in Tonga with my family I speak English with a rhythm that more resembles the way Tongans speak. The traditional female dress, with a ceremonial mat (Kiekie or Taovala) worn over it, also affects the way one holds one's body and I immediately adopt a different body posture. When I am about to step onto a concert stage for a recital, I can feel my body changing in reaction to the situation. It becomes more energised, more upright in posture, more confident and open as I try and engage with the audience.

Atherton used a very recognisable traditional Tongan rhythm and melodic shape in the piece (see Example 3).

Example 3 Michael Atherton *Oku Ou Talanoa mo Hoku Loto* (Bars 82-86)



As I was beginning to learn the song, a physical reaction took place in my body. I could feel myself becoming more Tongan. I wanted to make certain gestures of Tongan dance that I remembered, from having seen so many of these dances. My vocal timbre instinctively changed and I used much more chest voice than I normally would in *bel canto* singing. I decided that I would try to reproduce this effect each time I sang the piece.

The main challenge with Atherton's piece was to work out how to shape the piece, because although there is a very strong sense of narrative throughout the piece, the alternation between spoken sections and sung sections and the minimalist quality of Tongan traditional rhythm and melodic line meant it was easy to fall into the trap of treating each section separately. While there was shape within each individual section, there was no sense of the poem as a whole building towards a climax and then an ending. This was something that had to be rehearsed and agreed on with the performers and I can imagine that each time this piece is performed with different performers this interpretation will change.

Interpreting Asian and Pacific-influenced Music

I can recall that in the final year of high school in 1984, I made an appointment to see the head of singing at the Canberra School of Music to enquire about how to apply for a preparatory course that was being offered and he asked me to sing something for him. I chose to sing a Maori chant that had been the most popular piece in my Papua New Guinea High school cultural group's repertoire. It was full throated and passionate and I sang with all my strength to try and impress him and his wife, a noted pianist and vocal coach. They were intrigued, but asked me to learn something more classical for the audition that was to be held in three weeks. Then they gave me the name of a pianist who would help me learn the songs and told me to return for the audition.

For years afterwards I felt ashamed of having performed a Maori chant for them. I learnt to impose a cultural hierarchy onto music, in which European and Western opera traditions were at the top of the ladder and all my Pacific Island traditional performance at the bottom. This became more and more entrenched as I spent many years in training to become an opera singer. It was an exhilarating experience to be given the opportunity to proudly incorporate my Pacific heritage into a

performance. However, now I was experiencing concern about appropriating a traditional music style and interpreting it through the lens of a European trained opera singer, which is what I had become.

I was relieved to find that p'ansori had a history of transformation. Korea had never had a tradition of opera, but it had however had p'ansori singing. This slowly evolved when theatre came to Korea, adding orchestras, costumes and stage scenery until it became known as Korean traditional opera. Another transformation that happened during the nineteenth century was the training of female p'ansori singers who began to dominate the previously male art form (Killick, 2003). De Bruin coined the phrase hybrid-popular drama, which is a result of contact between indigenous and western theatre practice (Bruin de, 2000). Atherton's composition with its use of Korean p'ansori and traditional Tongan music is also a hybrid style and reflects the intercultural theme of the conference as well as adding to the body of work sharing Pacific, Asian and Western cultures. Shin's words of wisdom on the requirements of a p'ansori singer are not just relevant to a nineteenth century Korean singer. They are required of any performer, in any style. In the end we all need to tell a story as clearly as fine gold and beautiful jade.

Appendix 2

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Appendix 3

University of Wollongong 

Faculty of Education

PARTICIPANT INFORMATION SHEET

Project Title: A Social constructivist-learning model for singers as actors

PURPOSE OF THE RESEARCH

This is an invitation to participate in a study conducted by Lotte Latukefu at the University of Wollongong. The purpose of this research is to investigate the changes that students experience in their singing over three years in the undergraduate performance course, Faculty of Creative Arts and examine the kinds of strategies they employ in order to achieve these changes. The study aims to explore the role that critical thinking and reflection plays in the students' development, acquisition of motor skills and ability to become independent learners. It will compare the profile and development of singers with previous music education to those with little or no music educational background.

Lotte Latukefu-

Ph: 02 4221 4384 Lotte_Latukefu@uow.edu.au

Faculty of Creative Arts – School of Music and Drama

METHOD AND DEMANDS ON PARTICIPANTS

If you choose to be included in the second phase of this longitudinal study, the researcher is seeking permission to begin interviewing and recording the interviews for future analysis. The interviews are semi structured and examples of the types of questions to be asked are printed on the back of this information sheet. Transcripts of interviews will be stored in a locked cabinet, accessible by Lotte Latukefu only and held for 5 years as per the University of Wollongong human ethics guidelines. **The data collected from the interviews will be used in articles to be published in refereed journals and as part of a PhD.**

RISKS, INCONVENIENCES AND DISCOMFORTS

There are no risks or inconveniences forseen in this phase of the study. Your involvement in the study is voluntary and you may withdraw your participation from the study at any time and withdraw any data that you have provided to that point. Refusal to participate in the study will not affect your relationship with the University of Wollongong.

ETHICS REVIEW AND COMPLAINTS

This study has been reviewed by the Human Research Ethics Committee (Social Science, Humanities and Behavioural Science) of the University of Wollongong. If you have any concerns or complaints regarding the way this research has been conducted, you can contact the UoW Ethics Officer on (02) 4221 4457. Thank you for your interest in this study.

University of Wollongong 

Faculty of Creative Arts

UNIVERSITY OF WOLLONGONG

CONSENT FORM

Project Title Peer Assessment in Creative Arts Subjects: applying critical thinking to decisions about assessment through informed reflection and dialogue

Principle investigator :Lotte Latukefu, Lecturer in Singing and Performance, School of Music and Drama, Faculty of Creative Arts, University of Wollongong.
Phone: 4221 4384 Email: Lotte_Latukefu@uow.edu.au

Thank you for volunteering to participate in this study. Your signature on this consent form shows that you:

- Give permission for the researcher to invite you to attend 2 focus groups. The first to be held on March 28th 2008 and if needed the second to be held in May, 2008
- Give permission for the researcher to record the focus group for transcription and future analysis.

- Have been advised of the potential risks and burdens associated with this research, and have had an opportunity to ask Lotte Latukefu any questions you may have about the research and my participation.

- Understand that your name will not be used and you will be given a code number to guarantee cofidentiality. Any interview transcripts will show this code number not your name. and this code will not be released to anyone or published in any form.

- Understand that your participation in this research is voluntary, you are free to refuse to participate and free to withdraw from the research at any time. Refusal to participate or withdrawal of consent will not affect your treatment in any way or your relationship with the Department of Creative Arts – School of Music and Drama or relationship with the University of Wollongong.

If you have any enquiries about the research, contact Lotte Latukefu on 4221 4384. Any concerns or regarding the way the research is or has been conducted, please contact the Complaints Officer, Human Research Ethics Committee, Research Services Office, University of Wollongong on 4221 4457.

By signing below I am indicating my consent to participate in the research entitled A proposal of an alternative social constructivist model of learning for singers as actors. A Qualitative longitudinal study of undergraduate singing students in the Faculty of Creative Arts at the University of Wollongong conducted by Lotte Latukefu as it has been described to me in the information sheet and in discussion with Lotte Latukefu. I understand that the data collected from my participation will be used for publishing, and I consent for it to be used in that manner.

Signed Date

..../...../.....

Name (please print)

.....

University of Wollongong 

Faculty of Creative Arts

PARTICIPANT INFORMATION SHEET

Project Title: Peer Assessment in Creative Arts Subjects: applying critical thinking to decisions about assessment through informed reflection and dialogue

ResearcherL Lotte Latukefu – 4221 4384, Lotte_Latukefu@uow.edu.au

Faculty of Creative Arts – School of Music and Drama

PURPOSE OF THE RESEARCH

This is an invitation to participate in a study conducted by Lotte Latukefu at the University of Wollongong. The purpose of this research is to co-construct, with students, a performance peer assessment rubric, which could become the main tool of assessment employed by students to assess each other. The different stages involved in developing this rubric would be documented and transformed into a model that could be used by other disciplines interested in the concept of peer assessment in creative arts.

METHOD AND DEMANDS ON PARTICIPANTS

If you choose to be included in the initial phase of this study, the researcher is inviting you to attend 2 focus groups in order to discuss assessment criteria appropriate for the peer assessment rubric. Focus groups will last for 2 hours with lunch provided and there will also be a fee of $40 paid in Unishop vouchers at each focus group. Any data collected at these focus groups will be stored in a locked cabinet, accessible by Lotte Latukefu only and held for 5 years as per the University of Wollongong human ethics guidelines. **The data collected will be used in articles to be published in refereed journals and as part of a PhD.**

RISKS, INCONVENIENCES AND DISCOMFORTS

There are no risks or inconveniences forseen in this phase of the study. Your involvement in the study is voluntary and you may withdraw your participation from the study at any time. Refusal to participate in the study will not affect your relationship with the University of Wollongong. Please feel free to contact Lotte if you have any questions about the research or the procedures.

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University of Wollongong 

Faculty of Creative Arts

UNIVERSITY OF WOLLONGONG

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Project Title Peer Assessment in Creative Arts Subjects: applying critical thinking to decisions about assessment through informed reflection and dialogue

Principle investigator :Lotte Latukefu, Lecturer in Singing and Performance, School of Music and Drama, Faculty of Creative Arts, University of Wollongong.
Phone: 4221 4384 Email: Lotte_Latukefu@uow.edu.au

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Signed Date

..../...../.....

Name (please print)

.....

Appendix 4

Data generating instruments

Pilot Study Questionnaire

1. Have you had any previous singing training? If you answer yes, please describe your previous training experience.

2. Have you had any previous spoken voice training? If you answer yes, please describe your previous training experience.

3. Could you describe what you do with your body and voice when you are performing spoken dialogue on stage?

4. Could you describe what you do with your body and voice when you are performing a song on stage?

5. Which best describes your relationship to your voice?

a) My voice is something that is important to me, but I don't think about it very often.

b) I think about my voice all the time in relation to singing but not in relation to speaking.

c) I think about my voice all the time in relation to speaking but not in relation to singing.

d) I don't really think about my voice.

e) If none of the above fits your relationship to your voice please comment

6. Which of the following applies to you when you are performing?

a) I always trust my voice will allow me to communicate with an audience.

b) I rarely trust my voice because I feel it lets me down when I am trying to communicate with an audience.

c) Please clarify if neither of the above applies to you.

7. Describe a powerful learning experience they have had that has affected your understanding of singing or spoken voice production.

8. What have you found most helpful in the combined teaching that you have had?

a) Voice teaching

b) Singing teaching

9. What have you found least helpful in the combined teaching that you have had?

a) Voice teaching

b) Singing teaching

10. Do you consider it has been useful to have the combination of voice and speech teaching? If not give your reasons.

Student Reflective Journal Scaffolding

In first session of 1st year students used CARLT. This stands for; Context, Action, Response, Learning and Transference to aid them with their reflections.

In second session of 1st year students answered the following questions to help them reflect:

- How has my singing developed since the beginning of session? What needs to improve?
- What strategies do I need to develop and practice to improve?
- What have I read about singing or voice and how can I apply it to my own practice? Have I referenced this and do I have a bibliography?
- How have I tried to transfer any of my developing vocal skills to other situations? What happened?

The journals were collected at the end of each session and analysed.

Electronic Journal Evaluation

Subject	Induction/ Support	Purpose	Briefing	Graduate Attributes	Professional Skills	GA vs PS	Reflection	Career Connections	Worthwhile	Continued Use	Future Use	Navigation	Adding Entries	Tags	Display/ Print	Portability	Privacy	Best	Worst	Suggestions
PERF120		2	3	3	3	2	2	2	3	2	2	2	2	3	2	2	2	A great way to organise thoughts skills learnt and progression	Too many random unnecessary elements to it. Navigation was a little off due to the structure of the online journal home page. Make it as basic as possible.	Perhaps make it a little more readable and understandable - titles like 'tiddly wink' I don't think work as well as NEW JOURNAL or NEW BLOG, etc.
PERF120	1	4	2	3	4	4	4	5	3	4	4	3	2	4	4	2	3	It made me think about stuff I learnt in depth	If you didn't feel like you were having problems in the subject and didn't write about them then you failed or didn't do well. It's like they only wanted to know your problems	Have a time for us to reflect in class?

																			and insecurities.	
PERF120	1	3	2	5	4	2	4	4	5	4	5	4	2	4	4	3	3	No, it's irritating not good!	It's counter intelligent, difficult to use, a waste of time and an imperfect reflection of our learning.	Yeah, cut it out.
PERF120	1	2	3	4	2	2	5	4	4	2	3	2	2	3	2	1	1	Got to look back and see what we did, and how I have progressed.	The CARLT system wasn't good. I thought I understood it but my marks proved otherwise.	Instead of the CARLT system just use basic questions, ie. what did you do, what things were hard, how can you improve, etc… this would be easier to understand.
PERF120	1	1	2	4	3	3	2	2	2	4	3	4	4	3	5	2	1			
PERF120	1	2	4	5	5	5	5	5	5	5	5	5	5	5	5	5	5		It didn't save properly, was untidy, badly set out, and much more effective using	Just doing it in Word.

																			word.	
PER F120	1	1	3	3	3	2	1	4	3	3	3	3	3	1	1	3	3	an objective way of being assessed	time taken to get it working	just use Microsoft Word
PER F120	2	5	5	5	5	3	3	4	5	5	5	5	5	3	5	5	3			
PER F120	1	3	3	2	2	3	2	3	3	4	4	2	2	4	2	4	4	It helped me express, more effectively, the problems I need to fix	A lot of effort for not much result	Nope!
PER F120	1	2	4	5	4	1	2	5	5	5	5									
PER F120	1	3	2	5	4	2	4	3	3	5	5	2	3	5	3	2	3	conveniently attached to keys	inconvenient time wise and not that benificial, the idea is good but needs to be assessed differently.	perhaps group discussion
PER F120	1	3	3	3	4	2	2	2	2	2	2	2	1	2	2	2	2	Helps improve on your weaknesses	Sometimes there was nothing to write at all.	No
PER F120	3	2	3	3	4	3	4	3	4	4	4	4	1	1	1	1	1			
PER F120	1	3	3	2	3	4	2	3	4	4	4	3	3	2	3	3	3			
PER F120	1	1	1	2	3	1	3	2	3	3	3	1	1	1	1	1	1	Easy to operate	Having to write the journal itself was a	No

																			little frustrating. Having to allow 'blocked content' was also annoying & made me _____ when I was warned not to save because of this.	
PERF120	1	2	2	4	3	3	3	4	3	4	5	3	2	3	2	2	2	It's good for reflection	Time consuming	Nope
PERF120	1	2	3	5	4	3	3	5	5	4	1	2	2	3	5	1	3	learn how to use the features on a computer and a new programme	I found it a poor excuss to give the students an assignment. And by using it on a program that the students are unfamilar with.	Change the journals to simply writing in a diary or a text book, instead of wasting time trying to use a unfamilar programme.
PERF120	1	1	1	1	3	1	5	2	5	5	5	1	6	6	1	1	5	Its pretty easy to use… You don't need to know much to be able to use it.	NA. Sometimes you cant answer all of the CARLT thangs.	NA

PERF120	1	4	3	2	3	3	2	4	2	5	5	2	3	4	4	3	3	Self reflection	Confusion, tedious, unaware what am suppost to do	
PERF120		4	4	3	2	2	3	4	4	3	4	4	3	4	4	5	3	I could reflect on my own skills and find what I was strug gling with	I didn't know how to save what I had written. This I found annoying which I had finished because I had to start again!!!	Make it easier to save
PERF120		2	3	3	3	2	4	5	2	3	4	3	3	4	2	2	3	Reflection on what we have learned	Trying to use it was hard	
PERF120	3	2	1	4	2	1	3	2	2	4	4	1	1	4	3	5		easy to use		It should be clearer, as to what actually should be written in these journal entries.
PERF120		2	2	2	2	2	4	4	5	5	5	4	5	5	2	5	5	It's on the computer, so no hand writing is required	Hard to maintain, hard to add every week	Stability to program
PERF220	1	2	4	4	5	2	4	4	5	5	5	2	2	2	2	2	3	Keeping track of	Impossible to find enoug	Shouldn't need to be complet

																		singing techniques learnt	h content to reflect on in movement each week	ed for movement
PERF220	1	5	4	4	4	4	2	5	5	5	5	5	5	4	5	4	5	Reflection on work -> personal	Unnessesary format -> could use a notebook form same purpose & get same out of it.	See above
PERF220	1	3	5	2	2	2	2	5	5	5	5	5	5	5	5	5	5		Not being able to access the work I had saved on different computers	
PERF220		2	1	4	4		2	4	5	4	5	4	3	4	5	2	2			
PERF220	1	2	3	4	2	4	3	5	5	4	4	4	4	4	2	2	2	Reflecting	It's too complicated, its much easier in a word doc. There's too much stuff on the pages it's complicated.	Narrow the process down. Don't mind refelceting. The actual journal layout is too complicated.
PERF220	3	3	5	4	4	3	3	5	5	2	5	3	4	5	3	2	3	Adding my name	Saving it…Didn't work most times	
PERF220	1	3	5	5	4	3	2	3	2	5	5	4	4	5	5	3	3			

PER F220	1	3	4	5	5	3	2	4	3	5	5	4	4	4	4	5	4	Formats automatically, I suppose	that it was impossible to use!	Do it in word instead, I don't think its needed!
PER F220	2	4	3	3	5	3	4	5	5	5	5	3	3	3	3	3	3	waste of time	waste of time	x
PER F220	3	2	4	5	4	2	5	5	3	4	5	4	4	4	4	5	2	remembering _____	the time spent trying to work it, trying to fit my answers to a criteria rather than writing what I felt. I felt formulated ad had to lie to fit the criteria.	It's abolition !
PER F220	1	2	2	4	3	4	3	4	3	4	4	4	4	4	5	2	2	It was nice formatting and it felt cool to write in other than a boring word document	It deleted my stuff a couple of times! And the dates kept changing - Lucky too much stuff didn't get erased otherwise I would be extremely frustrated if this	Not so crowded with things - didn't know what a lot of stuff in it was, simple, but creatively formatted

																			was so.	
PER F220	1	2	4	5	5	3	5	5	5	5	5	4	3	5	5	5	5	it did encourage me to reflect	I didn't even get to sing this semester, the time would have been better spent actually learning. How can you reflect on stuff you didn't do?!	maybe if the criteria/instructions were looser it could have been more relevant or personal, maybe …
PER F220	0	3	4	4	4	3	2	5	5	5	5	3	2	3	3	4	2	unable to find any	Trouble with technical aspect. Useless. Found no point.	Avoid using/implementing this.
PER F220	0	3	5	5	5	2	3	4	5	5	5	5	5	5	4	5	5	no	I couldn't use it. I would have rathered writing a journal imply in a word document. I didn't have anything to write about.	no
PER	1	2	4	5	4	1	3	4	5	5	5	2	2	4	1	2	3			

F320																				
PER F320	1	4	4	5	3	2	2	5	5	5	5	5	5	5	5	5	4	N/A can't think of any… sorry kids.	Hasn't practically helped me in the slightest, the time it takes would be better spent practising	would be better if we could just do it in a book so as we do NO have to stress but the softwear
PER F320	1	1	2	3	4	3	4	4	4	5	4	3	2	2	3	2	3	Made me think about what I was learning. Didn't have a strong weighting in terms of my assessment.	the objects didn't involve much intellectual thought. The time would've been better spent practicing	Do a YAT journal, because we are actually needing to process intellectual concepts in YAT as a core of the subject.
PER F320	0	3	4	3	3	3	2	4	3	2	2	3	3	3	2	1	1			
PER F320	1	4	2	4	4	2	5	5	4	5	5	2	2	2	3	3	3			
PER F320	0	5	5	5	5	2	3	5	5	5	5	5	5	5	5	5	6	Nothing good. Really don't like it	hard to understand. Really no point to it	Not do it. Free lollies
PER F320	1	3	4	3	3	3	2	4	3	4	5	5	5	5	4	5	4	Probably nothing	Tiddly wiki, Tiddler, Blog	Free lollies. Not as complicated programs
PER F320	1	3	4	4	3	2	4	5	4	4	4	4	4	2	4	2	3	N/A	N/A	N/A
PER F320	3	4	4	3	3	2	2	4	4	2	5	3	2	2	2	2	4	help to reflect and gather ideas		

PERF320	1	2	5	5	4	2	1	5	2	4	5	4	2	2	2	2	3	Recording experience is helpful to better myself in my studies and looking back on previous entires to identify improvement and solve problems	Unecessarily complicated, not meant for Creative Arts students, ends up in a Word Document to be printed anyway. Set out and explain with heinous disorganisation.	Clearer explaination. Get rid of it. The same effect could have been achieved without the complication. It's called "Microsoft Word" or a handwritten journal. The whole experience was ridiculous.
PERF320	0	4	3	6	6	6	2	3	5	5	5	3	1	3	5	1	1	N/A	Doesn't relate well with the subject, understand the reasons behind it but particurly for movement the journal served no purpose. I felt as if I was recounting by using the journal not reflecting	
PERF320	1	2	2	2	2	2	2	2	2	4	4	2	2	2	2	2	2			

PER F320	1	3	5	5	5	2	5	5	5	5	5	5	5	5	5	1	3		counter-intuative	
PER F320	1	4	2	5	4	2	3	5	4	5	5	2	2	3	2	5	3	N/A	Lack of relation to subject	Make more useful? (more lollies?)
PER F320	1	2	2	3	5	5	4	4	5	5	5	4	5	3	5	2	5	It has a good premise	Hard to use. To much involved	make it easy to use. Keep it simple
PER F320	1	3	4	4	4	2	3	4	5	4	5	5	2	2	4	3	4	nothing	To hard, purpose is what? Was more about getting the journal done, then it was about reflection	N/A Not compulsory for assessment. Free lollies please!
PER F320	0	2	3	3	1	2	2	3	2	3	2	4	2	5	4	3	2	Keeping track of what I was doing in class	The layout was tragic, thus I changed it dramaticly and made it ezr to use	Change the layout
PER F320	1	2	4	3	4	2	4	2	5	5	5	2	4	3	4	3	3	It's colourful	Functionality, inconvienient	Don't make it electronic. Keep it written
PER F320	0	2	3	5	5	4	2	5	5	5	5	2	2	2	3	2	3		Just because you can write about it doesn't mean you can do it. Some one who's	It it's not going to be eliminated, then at least make it worth a less amount of the overall mark.

																			good at writing could get a better mark that the best singer. It doesn't reflect ability or effort coz people made things up.	
PERF320	1	2	3	4	3	3	4	4	3	4	4	4	3	4	4	3	4	Reflecting on skills	The program was difficult to use and never worked	See above
PERF320	1	1	4	4	1	2	1	1	2	5	3	5	2	4	2	1	0	REALLY helped to reflect, feel I have progressed further	My home computer was not compatible with the program, so I had to do it at uni. S it didn't really happen. Having to do it all the time.	Change so it can be used on any computer

PERF320	1	4	4	4	4	1	4	5	5	5	5	2	2	2	1	1	5	It's layout with active links means we could potentially put it online as a sort of online resume.	Technical difficulties early on. The fact that it's not actually online. The compatibility factor. It sometimes feels irrelevant to what we are doing. Because it's stored on a usb/computer & not online there's a lack of immediacy of reflection. If it was online, or simply a written journal this would not be the case.	An online webspace to host our journals instead of the hassle of storing, resaving & updating it everytime we tried to move it. Also, it would be useful to have sepeare te entries for transferable to see after the event whether our skills had tranferred
Unspecified	0	5	2	5	5	6	5	5	5	5	5									
Unspecified	0	2	2	5	2	3	2	4	5	5	5	4	4	5	4	1	5			
Unspecified	1	3	4	4	3	3	2	2	3	4	4	4	4	4	4	3	2		It didn't work	

Unspecified	0	1	5	5	5	5	5	5	5	3	5	5	5	5	5	1	1		It took forever to learn. I didn't know how to save it. Its time consuming and not clear. I hate the online journal, seriously.	Get rid of it
Unspecified	1	2	3	2	3	1	2	1	3	5	4	2	2	2	2	1	1			
Unspecified	0	2	3	5	2	4	2	5	5	5	5	4	3	4	2	3	2	I liked having a voice to communicate what I think of my learning	I have a feeling my time was mispent - I think the assessment % could have been placed on something more practical	I don't like it
Unspecified	1	5	5	5	5	2	2	3	4	3	3	5	5	3	5	2	2		Hard to use. Confusion	a couple more classes on how to do it

Appendix 4

Focus group questions for peer assessment

Key questions:

1. How do they think peer assessment could work?
2. Do those performers who are keen to pursue a career in singing, as opposed to those who want to sing simply as part of their acting skills, require a different set of assessments?
3. What problems can they foresee with peer assessment?
4. What solutions to each of these problems can be found?
5. How would each of the assessment criteria be worded?

Focus group questionnaire March 28, 2008

Please indicate the degree to which you agree or disagree with the following statements.

	Strongly Disagree	**Disagree**	**Neither agree nor Disagree**	**Agree**	**Strongly Agree**	**No applic**
I was given the appropriate background knowledge to participate in the focus group.	□	□	□	□	□	□
The information in the focus group is relevant to my current performance practice.	□	□	□	□	□	□
The peer assessment information is relevant to my personal skills development	□	□	□	□	□	□
I anticipate that at least some of the information discussed in the focus group will be relevant to my future career plans	□	□	□	□	□	□

	Strongly Disagree	**Disagree**	**Neither agree nor Disagree**	**Agree**	**Strongly Agree**	**No applic**
I enjoyed taking part in the focus group	□	□	□	□	□	□
I feel my contribution was important in the co-construction of the assessment rubric	□	□	□	□	□	□

Any other comments?

What features of the focus group were most helpful to your participation in the construction of the assessment criteria?

Peer Assessment Questionnaire

6. **What did you like best about the peer assessment exercise? Why?**
7. **What did you like least about the peer assessment exercise? Why?**
8. **Peer assessment makes me:**
    a. **Think critically- Strongly agree/agree/strongly disagree**
    b. **Feel a sense of responsibility- Strongly agree/agree/strongly disagree**
9. **Could you comment on how your personal knowledge about the student you were assessing affected your judgment?**
10. **Could you comment on how this peer assessment exercise may have affected your own learning?**

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