

Module Number: BMPF3726

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Pilot study: An investigation on the perceived learning
experience of implicit and explicit instructions in
singers.

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Project Proposal

1. Project Title

Pilot study: An investigation on the perceived learning experience of implicit and explicit instructions in singers.

2. The Context

I will conduct this project under Winnie Tang Vocal Coaching, founded in 1998, a private voice studio in Hong Kong. As the founder, I have been teaching one-on-one lessons and group classes at my private studio and in different institutions in Hong Kong. I was the resident Voice instructor at the Baron School of Music from 2006 to 2022 and am currently a part-time lecturer at the Hong Kong Academy for Performing Arts's Drama School.

3. The Justification

There appears to be little or no research or literature on the impact of implicit and explicit instruction in voice training, particularly from the students' perspectives. Most studies on motor learning are related to sports science (Brown, 2024) and speech therapy (Grillo et al., 2024). A few articles on voice training were approached either from a top-down perspective with an authoritative voice or from a results-oriented perspective. I would like to learn from the students' opinions on both types of instruction and how they have impacted their learning experience. Since this project will investigate the perceived learning experience of the students on implicit and explicit instructions through interviews, it will allow me to learn about students' experiences in their own words. I hope these insights will help voice teachers better adapt to the learning needs of their students.

4. The intended impact

This project aims to explore students' learning experiences, gain their perspectives on how they perceive and respond to implicit and explicit instructions in singing lessons, and determine if they prefer one approach. By acquiring this information, I hope to take a more student-centred approach in my future teachings and create a more co-constructive environment.

5. The outlined intention

I hope to gain insights into how singing students experience implicit and explicit instructions in voice lessons and if there is a preference for either or both methods. I will recruit four student

volunteers from my private voice studio. A 15 to 20 minutes interview will be conducted via Zoom, with each participant in Cantonese. The interviews will be transcribed and translated into English. Before the interview, participants will be briefed with an explanation of implicit and explicit instruction to ensure they are aware of the differences. A semi-structured interview will be conducted with open-ended questions. I will then collect data from the participants to analyse and interpret their experiences, aiming to determine the perceived impact of each method and their preferences. This will be a qualitative study with thematic analysis.

Expected timeline:

- A literature review will be done on implicit and explicit learning and its current situation in music education.
- Participants will be recruited and contacted to arrange appointments for interviews over Zoom.
- Participants will sign consent forms.
- Interviews will be conducted in Cantonese over Zoom.
- Interviews will be transcribed and translated into English.
- Coding the data.
- Data will be thematically analysed in a deductive way.
- Write up my findings.

6. The ethics and insider research

There could be potential bias and power dynamics since I am both the teacher and the researcher. I aim to mitigate this by focusing on the information provided by the students and not interpreting the data with previous knowledge and bias to maintain objectivity. Participants will be recruited voluntarily to ensure no students are pressured to participate. All data will be anonymised to protect the confidentiality of the participants.

7. Personal learning outcomes

I aim to understand the impact of implicit and explicit instruction on singing students and how the students perceive both types of teaching. I also aim to find out if students have specific preferences among these methods. I anticipate that this project will help me adapt my teaching methods more effectively as a voice teacher to make more informed, student-centred, and evidence-based teaching in my studio in the future.

Introduction

“For every teacher who promotes an understanding of voice science there are as many who are either oblivious to its existence, through lack of adequate training” (Callaghan, 1998, cited by Brown, 2023). There has always been an ongoing debate between science and artistry in vocal pedagogy (De Lillis, 2020). However, Brown (2023) suggested that need not be the case if we could synthesise the two. Rather than looking at this from a science vs. artistry perspective, I would like to explore it through the lens of motor learning.

Many studies on motor learning have been conducted on limb tasks and sports, but not much has been done on the vocal tract or vocal pedagogy (Perta et al., 2023). The transference from explicit (“know-that”) to implicit (“know-how”) knowledge in motor learning theory might be the key to tying voice science and skills acquisition together (Helding, 2015).

I am interested in learning how implicit and explicit instruction in motor learning impacts learning in singing from the students' perspectives. The tradition of the master-apprentice model has long persisted in voice teaching (Brown, 2023, 2024). Singing teachers will need to reinvent their role as facilitators instead of authoritative figures to create a co-constructive environment for learning (Brown, 2024).

Literature Review

Definition of implicit and explicit instructions

“Explicit learning involves learning through conscious awareness and declarative knowledge of motor tasks” (Reber et al., 1991, cited in Garnass and Tillaar, 2024, p.1). On the contrary, “implicit learning does not require explicit rules of execution and does not involve declarative knowledge” (Maxell et al., 2003, cited in Garnaas and Tilaar, 2024). Implicit instructions can involve imagery, analogy, common emotion or organic gestures. Auditory-perceptual directions like “speak clearly” or “use a higher pitch” could also be considered implicit instructions. Explicit instructions emphasise biomechanical instructions, detailing how particular movement patterns should be executed. However, explicit instructions do not provide general or abstract directions, for example, physical sensations without specific anatomical context (Grillo et al., 2024).

Benefits and Limitations of Implicit and Explicit Instructions

Explicit instruction utilises verbal explanations and coaching that require a greater memory load of the learner (Miller et al., 2018), which is not favourable for coaching that aims to give immediate guidance to promote swift motor control skills (Van Abswoude et al., 2021). However, Explicit instructions give clients a clear anatomical and physiological understanding of their assigned tasks. This knowledge empowers clients with greater autonomy in controlling their voices, which could motivate them to maintain and adhere to their practice (Grillo et al., 2024).

Implicit learning enables learners to perform specific tasks without consciously controlling or correcting their actions, thereby avoiding cognitive overload (Garnaas and Tilaar, 2024). It involves accumulating task-specific knowledge that becomes automatic, eliminating reliance on working memory (Masters et al., 2019, cited in Garnaas and Tilaar, 2024, p. 1).

Concerns about performance variability, retention, and transfer capabilities associated with explicit instructions have been raised, particularly in studies involving bodily motor tasks (Wulf, 2013, 2016). However, neurophysiological research using functional magnetic resonance imaging (fMRI) has identified neural mechanisms underlying both conscious and automatic processing during motor skill acquisition over time (Lehéricy et al., 2005, cited in Perta et al., 2023). For example, motor skills are first acquired through conscious processing in the associative cortico-basal ganglia circuit and then gradually become automated within the sensorimotor circuit (Lehéricy et al., 2005). These findings may provide support for integrating implicit and explicit instructional approaches (Tellis, 2014; Toner & Moran, 2014, 2015). “Task instructions can be structured to support a learner’s automatic processing (i.e., implicit), controlled processing (i.e., explicit), or both” (Tellis, 2014, 2018, cited in Perta et al., 2023).

A study by Perta et al. (2023) on untrained participants learning speech nasalance tasks suggested that combining implicit and explicit instructions achieves more learning progress and less performance inconsistency compared with solely implicit or explicit instructions. The study also found that explicit instruction may be slightly more effective for simple tasks but leads to less progress on more complex tasks. In contrast, implicit instruction alone promotes greater learning progress for complex tasks when compared to explicit instruction alone.

How Motor Learning Has Been Studied in Sports: Are There Studies Related to Singing?

Sports science research has extensively explored implicit and explicit instruction in motor learning, but motor learning studies on singing and voice pedagogy are rare (Perta et al., 2023; Holding, 2015). Even though many principles of motor learning can be applied to singing

(Helding, 2015.) Helding (2015) suggested a few possible reasons for the rarity of motor learning research in singing: 1) few voice teachers are also researchers, 2) singing is a complex series of continuous muscular tasks that makes it more challenging to study, 3) most studies are concerned with voice disorders. Studies on healthy functional voice are often related to physical science, such as acoustic, and not learning science (Helding, 2015).

Perta et al. (2023) suggested there has been a growing interest in motor learning research in speech-language pathology and vocal pedagogy in recent years. However, most of these researches were conducted within the framework of sports science and bodily motor tasks, which differ fundamentally from the motor tasks of the vocal tract. For example, bodily motor tasks are visibly measurable, whereas speech or vocal tasks depend more on auditory perception. This informs us of the need for more appropriate speech or voice motor learning research techniques in future studies (Perta et al., 2023). Although many research studies have examined the effects of implicit and explicit instructions, long-term retention tests or studies are lacking (Miller et al., 2018). As a result, it is unclear how implicit and explicit instructions differ in helping learners retain information over time. However, a decline in information retention is expected with both approaches as the length of the retention intervals increases. (Garnaas and Tilaar, 2024).

Methods

Four participants volunteered for the study, each having at least four years of private vocal training at my studio. This ensured that all participants had a substantial foundation in voice studies and were familiar with both implicit and explicit instructional methods, as these have been incorporated into their lessons over the years. Additional explanations were given to them before the interviews were conducted.

All four participants are adult females with age ranging from their early twenties to their sixties. They are all amateur singers and voice students at my voice studio. Student 1 is an administrative executive in her 20s; Student 2 is a human resource executive in her 60s; Student 3 is a speech therapist and lecturer in speech-language pathology in her 40s; and Student 4 is an amateur choir singer and accountant in her 30s.

I conducted individual interviews with each participant over Zoom recordings in Cantonese to ensure participants could express themselves comfortably and naturally. Semi-structured interviews were devised via open-ended questions to obtain insights into participants' personal experiences with implicit and explicit instruction in private singing lessons. While conducting research for my literature review, I discovered a noticeable lack of studies focused on voice students' perspectives on learning methods. It seems as though their voices have gone unheard. Thus, I started my semi-structured interviews by asking for their personal opinions with open-ended questions:

1. What are your opinions on implicit instruction?
2. What are your opinions on explicit instruction?
3. How was your learning experience with these two methods?
4. Is there one method you prefer?
5. Which method or methods do you find most effective?

Participants were encouraged to share their experiences and opinions in detail. The collected data was transcribed and translated from Cantonese into English for analysis. I then completed my literature review defining implicit and explicit instruction and their potential relations in voice training. Identifying the lack of studies in motor learning in singing and student-centred studies.

I began the coding process by identifying common themes in the data, such as confusion, kinesthetic awareness, implicit, explicit, and others, using colour coding to organise them. I gradually refined these into four main themes using thematic analysis. As I analyse this data, I am familiarising myself with it and starting to see patterns emerging and the correlation between them.

Methodology

I decided to conduct this study from a constructionist ontological point of view. According to Williamon (2021), reality is not something that exists on its own but is created through human interactions and interpretations. This work-based research is a qualitative study focused on understanding students' experiences, opinions, and preferences regarding implicit and explicit instruction in private singing lessons. Qualitative research explores how people interpret social or human issues (Creswell, 2023) with a “focus on *understanding* the social world” (Williamon, 2021, p. 31). It employs an inductive approach, a bottom-up manner rooted in data (Williamon, 2021), to obtain data from the participants themselves. The qualitative approach analyses and

interprets the significance of the data, with an emphasis on the individuality and intricacy of each scenario (Creswell, 2023).

I first employed an inductive approach with semi-structured interviews to gather subjective experiences and data from the participants. Then, I used thematic analysis to identify the main themes in the findings. "Thematic analysis (TA) is a method for identifying, analyzing, and interpreting patterns of meaning ('themes') within qualitative data" (Clarke & Braun, 2017).

As I analysed the data, I was looking at the participants' subjective experiences, which is a subjectivist paradigm. However, objective facts were also being gathered simultaneously. This aligned with pragmatism, which focuses on practical solutions and effectiveness (Patton, 1990).

Ethical Considerations

To ensure ethical research practices, approval of the ethics form was obtained from the University of Wales, St. David Trinity. Participants provided signed informed consent before the interviews were conducted. All personal information of the participants was kept confidential by anonymising them in the data presentation. I also conducted the interviews in the participants' mother tongue to ensure they felt safe and respected to share their experiences authentically.

Insider research

Being an insider researcher in this study gave me the advantages of familiarity with the topic and easy access to participants. In this study, the entire sample of participants was female, which might contribute to better rapport (Mayan, 2023). Acting as both the teacher and the researcher might create potential biases. Maintaining objectivity and reflexivity is crucial to ensure the study is conducted ethically. To minimise the potential risk of influencing the participants' responses, I remained silent during the interviews after asking each question, ensuring the participants could respond without interference.

Findings

Previous learning and perceptions

In the field of vocal pedagogy, there is no universally accepted standard or definitive teaching protocol (Titze, 1989). Even terminology in voice teaching, as suggested by Titze, 1989, "is

neither descriptive nor universally agreed upon” (Titze, 1989, p.19). The lack of uniformity could lead to confusion for students and teachers, often leaving them frustrated (Titze, 1989). Most voice training nowadays is still teacher-centred (Crocco & Meyer, 2021), a master-apprentice relationship, with the teacher being the authoritative figure and the student being on the receiving end with lots of imagery and little science (Brown, 2023). Many have challenged the validity and sovereignty of imagery-based voice training methods passed down orally in the singing teaching tradition (Ware, 2013; De Lillis, 2021).

Two students who participated in this study have had previous learning experiences with other singing teachers and singing classes. One reported a lack of scientific explanations from previous singing lessons, and only imagery and imitation (modelling) were used. However, due to the lack of information, she thought it was a common practice and went along without questioning. Student 1 mentioned:

“Before learning from you, I attended group classes where most of the teachers did not explain the theory behind the techniques. Instead, they often asked me to imitate sounds or rely on my imagination. Because of this, I thought it was very common to learn using abstract methods, especially since I did not have any foundational knowledge. I felt that the teachers were simply using basic, layman methods.”

Her statement reflected a lack of information available for potential voice students, which might lead to over-dependence on their voice teachers (Crocco & Meyer, 2021). Michael (2010), as a speech-language pathologist, had treated many singers with voice disorders. She observed that many of these cases might have stemmed from issues with singing techniques. She realised these singers likely operate under misconceptions about vocal techniques or the vocal mechanism itself. Deidre labelled these misconceptions as “myths,” as they appeared to be passed down from teacher to teacher without being rigorously examined for scientific validity. Most of these myths were taught implicitly by teachers whom the students trusted (Michael, 2010).

Potential for confusion

All four students reported experiencing confusion with both implicit and explicit instructions independently. Based on my findings, it was evident that relying solely on implicit or explicit instruction has the potential to create confusion and inconsistency in learning and performance

in students. This aligned with the findings of Perta et al. (2023), which explored how untrained participants learned speech nasalance tasks. The study revealed that performance variability was highest in the explicit instruction group, similar variability in the implicit group and lowest in the mixed method group. Suggested that combined instruction can lessen variability in performance consistency (Perta et al., 2023).

Confusion with implicit instruction

Students 1 and 4 found implicit instruction using imagery or imagination confusing, as it lacked scientific explanations to clarify the purpose behind the tasks they were asked to perform. De Lillis (2021) emphasised that scientific and anatomical understanding of the vocal apparatus, the larynx, can offer clarity into the workings of the larynx during singing.

Student 2 reported that she would not understand what she was doing if only implicit instruction, such as metaphor, were used. Student 2 said, “I would not know what I am doing if you only use metaphors.” According to student 1:

“I was usually told to imagine a balloon or to swallow. I did not understand them because there were no scientific explanations then.”; “I thought it was super abstract. And I was often told to imagine drinking bubble tea.”; “I was very confused with the imagery/implicit methods at first.”

Brown (2024) argued that using stock imagery can be misleading for students, as it overlooks their personal experiences, whether mental, physical, or vocal, and fails to consider whether the student can relate to the imagery in a meaningful way. “The use of imagery is a time-honored method of teaching singing, and many useful images are actually at odds with physiologic reality. The problem is that some singers will confuse imagery with reality and base their technique on a concept that was useful as an image, but dangerous as a core belief” (Michael, 2012, p. 417)

Student 4 found that learning with implicit methods led to inconsistent results and left her uncertain about how the tasks were accomplished. This made replication or execution on demand impossible. Student 4 said:

“I remember when I first started learning. It seems there were more implicit instructions, like imagining smelling something good or using much more imagery. At that time, I could only succeed sometimes and fail at others. Also, I am unsure if I am doing things

correctly because I cannot tell auditorily. That is why I am inconsistent and uncertain whether I am executing tasks accurately. And I cannot replicate the result every time. Also, I do not understand what is going on inside my larynx.”

Confusion with explicit instruction

Students 1 and 2 experienced confusion with explicit instruction because of its academic nature and lack of kinesthetic awareness. Too much information might overwhelm students due to its cognitive demands (Verdolini, 1994; Miller et al., 2018). One of the reasons students felt a lack of kinesthetic awareness with explicit instruction could be because the inside of the larynx cannot be touched or observed directly (McKinney, 1994). Hence, many singing teachers turned to imagery (Michael, 2010). Student 1 mentioned:

“I was also very confused when I first learned the scientific theory through explicit method. I did not know how to control the different structures (of the larynx).”

Student 2, a more mature student, mentioned:

“When you taught me about the physiology and science of the voice (explicit instruction), I felt very unfamiliar because I am no longer in school. When you taught me the academic stuff, I was baffled. I found it difficult to understand these explicit instructions initially.”

Student 4 found learning through explicit instruction difficult only when there was a lack of kinesthetic awareness of particular anatomical structures. If the part of the anatomy is palpable, Student 4 reported no issues with executing the vocal tasks, for example, palpating the larynx to monitor the larynx’s height.

Brown (2023) argued that teachers often preferred to use imaginative language in voice lessons since scientific language in explicit instruction may not always feel relatable or practical to students (De Lillis, 2020). “Despite the assimilation of science in vocal pedagogy, this oral tradition is still in use” (Callaghan, 2014, cited in De Lillis, 2021, p. 92). However, Brown (2024) warned that using stock imagery might lead to potential confusion and vocal health risks for students (Michael, 2010). Therefore, it is crucial to remain mindful of the possible misunderstandings imagery can cause if it is not grounded in accurate scientific principles (Brown, 2023).

Individual preference

Brown (2023) suggested that given there are different types of learners, such as visual or verbal, imageries and metaphors remain valuable and beneficial when tailored to the needs of the appropriate learners, provided they are validated by current voice science. Furthermore, collaboration and co-construction between students and teachers are essential for effective learning (Brown, 2023).

Students 1 and 4 preferred a mix of implicit and explicit instruction. Students 2 and 3 preferred implicit instruction but agreed that mixed methods could help them with advanced singing techniques.

“Everyone has different preferences.” Student 1 emphasised the significance of individual learning styles or preferences. “Drawing on the work of Gardner (1993, 2006), we must also be aware of the variety of learning styles. For some, too much scientific information may cause them to become over focused on mechanics (Verdolini, 1994); too little and the student may perform inefficiently” (Gardner, 1993, 2006; Verdolini, 1994, cited by Brown, 2023, p. 32).

Student 1 shared that combining implicit and explicit instructions gave her greater clarity and understanding. Combining implicit and explicit instruction allowed her to cross-reference and integrate. She could then connect cognitive understanding with physical execution. Student 1 mentioned:

“When I learn the theories behind singing. I could understand much better.”; “I felt I could start to connect the dots. In my experience, I think that two methods have to be mixed, and neither can be used alone effectively.”

“After I learned about the science behind it with explicit methods. I started to realise what was happening inside (my larynx). Even though I cannot see inside my larynx, I began to feel the difference (kinesthetic awareness), for example, palpating the larynx and how not to constrict when I sing. I can start to feel these. I prefer mixing both methods.”

Student 4 also expressed a preference for a mixed-methods approach. She reported experiencing greater interoception and kinesthetic awareness when explicit instruction was incorporated after vocal tasks had initially been taught implicitly. Student 4 explained:

“By integrating implicit and explicit instruction, I now know exactly what is going on inside. Explicit instruction made it easier for me to judge my feelings inside (the larynx). That is why I like mixed methods.”

Additionally, Student 4 noticed that the mixed-methods approach allowed for faster recall of techniques. She remarked, “I usually recall techniques during singing with both (implicit and explicit) methods. This way, I know what I am doing better.”

These findings suggested that understanding the science and anatomy behind imagery and imagination could help learners develop greater kinesthetic awareness. Grillo et al. (2024) suggested that informing clients about the anatomy and physiology of vocal tasks gives them autonomy and the power to control their vocal decisions, which can encourage clients’ motivation and adherence to their practice.

Student 2, a more mature lady, preferred implicit instruction because it was easier for her to understand and relate to. This could be due to a lower cognitive load than explicit instruction and the familiarity of daily life experiences. This aligns with Miller et al.’s findings in 2018 regarding potential cognitive overload, which occurs due to the demand placed on working memory when explicit instruction is used to acquire declarative knowledge (Miller et al., 2018). Student 2 expressed: “I prefer more implicit/daily lives/abstract methods. For example, metaphor. It was easier for me.”

She also mentioned that her preference for implicit instruction might be due to her age and life experience. This raised the question of whether mature learners might prefer implicit instruction because of a lesser cognitive load. A study by Dennis and Cabeza in 2011 on age-related dedifferentiation of learning systems: an fMRI study of implicit and explicit learning found that as people age, their brain's learning systems become less specialised. In younger adults, different parts of the brain are used for different types of learning. Implicit learning relies on the striatum, while explicit learning relies on the medial temporal lobe. Younger adults also show competition between these brain areas during tasks learning. However, this separation and competition between brain regions disappear in older adults. Regardless of these differences, the older adults performed both implicit and explicit tasks learning just as well as the younger group (Dennis & Cabeza, 2011). This suggested “that such neural dedifferentiation is compensatory in older adults and supports the maintenance of cognitive functioning comparative to functioning observed in younger adults” (Dennis & Cabeza, 2011, p. 28). How these findings would relate to

the preference for implicit learning in older adults is yet to be determined, as this is only the first study focused on learning-related brain regions (Dennis & Cabeza, 2011).

On top of this, would their broader life experiences make learning through imagery or imagination easier compared to younger learners or children?

“While scholars such as Piaget and Inhelder (1971) demonstrate how working with the experiences of students are beneficial for learning, there may be a need for greater scaffolding or direct instruction for some inexperienced singers. It is not yet understood how developed their imaginative perceptions are and therefore how this may impact their physical processes in singing” (Brown, 2024, p. 8).

No studies have been conducted so far on young singers to determine whether they possess the resources and experiences necessary to implement these physical changes (Brown, 2024).

However, Student 2 agreed that to deepen understanding and further develop advanced techniques, explicit instruction is necessary. As a result, she believed that a mixed-methods approach would be the most effective for teaching and learning. Despite this, she still preferred implicit instruction and felt it was the most efficient method for beginners because of its relatability to daily life. This supported the embodiment of students' own experiences in Clean Language Coaching by David Grove, an imagery-based psychotherapy approach where the clients are encouraged to create their own imagery or imaginative scenarios through open-ended questions. Therapists merely facilitate instead of interpret (Brown, 2024). Brown (2024) suggested that the Clean Language Coaching model could be adopted by singing teachers to help develop the use of imagery in voice lessons. Student 2 mentioned:

“I am a very experienced individual (age), that is why I prefer to use daily life experience to learn as a beginner. Because of my age and experience, I felt it was easier to learn with implicit or more abstract instruction at the beginning phrase. It is easier to achieve the vocal tasks.”

“But to improve further so that I can do things that I wasn't able to do before, an explicit method is needed. You can tell what you are doing and do things on command. Rather than using something abstract, I can know and control the structures independently and know what is going on. It allows more flexibility, and I don't need to rely only on imagery. I agree that the methods should be mixed or hybrid.”

Student 3, a speech therapist, also favoured implicit instruction over explicit instruction, particularly as a beginner. She also experienced faster recall of vocal tasks with implicit learning. This corresponds to Student 2 preference for less cognitive load during learning. Garnaas and Tillaar (2024) explained that verbal instructions and feedback, part of explicit instruction, require more cognitive load and working memory. Due to this reliance on cognitive load with declarative knowledge, recalling tasks requires retrieving instructions from the working memory, which may have decayed or been forgotten over time (Garnaas & Tillaar, 2024). Student 3 mentioned: “I prefer implicit instructions as a beginner. To recall techniques faster, I would prefer implicit instruction.” Student 3 also agreed that the mixed-methods approach was beneficial. Student 3 mentioned::

“Later on, when you explain things explicitly and then return to the implicit mode, I realised what I was doing. This approach helped me understand how to improve my techniques.”

Perta et al. (2023) also found that “the integrated group descriptively outperformed both implicit and explicit groups across all speech tasks” (Perta et al., 2023, pp. 4407–4407).

Findings from all four students revealed they all considered mixed methods beneficial, even though two (students 2 and 3) preferred implicit instruction at the beginning phase of learning or for faster vocal task recall during performance. This aligned with Perta et al.’s study in 2023 that employing a mixed-method approach, combining both implicit and explicit instruction, resulted in better learning outcomes and greater performance consistency (Perta et al., 2023) compared to implicit or explicit instruction alone (Grillo et al., 2024).

Modelling

The theme of modelling and imitation emerged from the interviews with all four students. It appeared that all of them found modelling beneficial in their learning. They considered it an effective assisting method, especially when combined with explicit instruction. Vocal modelling is one of the strategies singing teachers commonly use (Fonza, 2014) for various purposes, such as pitch matching, song studying, building vocal tone, and developing musicianship. Teachers would demonstrate the “desired” or “undesired” sounds or tones aurally for the students to imitate (Hinkley, 2024). Through observations of music teachers using modelling across

students of various age groups, Dickey (1992) concluded that modelling was a more effective instructional method for performance-based skills teaching than verbal instruction (Hinkley, 2024). “Modelling allows students to observe things that are not easily described and may help them establish a reference-of-correctness” (Crocco & Meyer, 2021, p. 695).

Student 1 mentioned:

“If you add some abstract/implicit instruction in the middle. Like, give me some sound to imitate. Just like the ambulance sound related to Siren. This way, I am confident/clear about what I am doing because I will have a formula in my mind.”

Student 2 mentioned: “For example, when you asked me to imitate a duck’s quack. I now understand the physiology behind it with scientific explanations and can understand all the elements in the imitated sounds.” Student 3 said: “It was very easy for me to imitate sounds.”

Ebie (2004) conducted a study on how different treatment conditions affect middle school music students, both male and female, in helping them to sing expressively. Ebie (2004) found vocal modelling scored the highest mean amongst other treatments, such as verbal, kinesthetic, and audio-visual. “This supports researchers who have found modeling is more effective than verbal instruction” (Davidson, 1989; Dickey, 1991; Ebie, 1993; Rosenthal, 1984; Rosenthal et al., 1988; Sang, 1987, cited by Ebie, 2004, p. 414). Students also preferred vocal modelling over verbal instruction, even though kinesthetic and audio-visual methods scored higher in preference by the students (Ebie, 2004).

Student 3, a speech therapist, suggested that students with a less advanced educational background might find imitation or modelling easier. However, she also expressed that this approach could potentially prevent a deeper understanding of the vocal mechanism and the vocal tasks. Crocco and Meyer (2021) argued that excessive modelling might hinder skill acquisition and deprive students of autonomy. Student 3 mentioned:

“For people with less advanced educational backgrounds, I think teaching too much anatomy will not help because they will find it difficult to integrate. Implicit instruction or imitation would be more straightforward. It would be easier for them to do it by modelling. But they will not have a deep understanding of what is happening inside and what is happening with the muscles.”

Student 4 mentioned, “If it involves parts of my anatomy that I cannot feel easily, meaning the muscles that I am not familiar with, then I will need some prompts, more implicit methods or something to imitate to achieve it (vocal tasks).” This suggested modelling might facilitate kinesthetic awareness when explicit instruction sometimes fails.

Günter (1992) emphasised the importance of demonstration by singing teachers during voice lessons because terminology in voice science alone could not effectively help students. Teachers must be able to accurately demonstrate what they are teaching. He observed that some young teachers often explained concepts accurately in words but failed to perform the tasks themselves, which could mislead students. A good demonstration, he argued, is more effective than theoretical explanations (Günter, 1992; Dickey, 1992).

Conclusions

Based on the findings of this study, we learned that students might bring their previous learning experiences and conceptions to the voice studio. These experiences and conceptions may or may not align with voice science and predominately came from previous teachers. Also, there seemed to be a blind trust in the authority of the voice teachers.

Both implicit and explicit instructions had their challenges when applied independently. Confusion was experienced with both methods when they were presented alone. Students found implicit instruction abstract and incomprehensible because they were not told “why” specific imagery was used. They also found explicit instruction overwhelming because of the academic nature of scientific explanations and the inability to relate kinesthetically. However, all students agreed that integrating implicit and explicit methods helped mitigate these challenges. Explicit instruction supplemented implicit instruction with physiological and anatomical understanding, which paints a clearer picture of the body structures involved. At the same time, implicit instruction and modelling filled the gap for the lack of relatability of explicit instruction.

Individual preferences reminded us as singing teachers that voice students have different learning styles and needs. We should be progressing towards a more student-centred approach than the traditional teacher-centred one (Brown, 2024).

Modelling emerged unexpectedly during the interviews as students discussed what was helpful for their learning in voice lessons. They reported that imitation or modelling was not only easy

and relatable but also improved their kinesthetic awareness. Students also reported more confidence in executing vocal tasks when there were clear auditory examples to imitate. Even though the students might favour modelling because of its straightforward nature, it could limit the scientific understanding of the vocal mechanism.

Limitation

This study had a very small sample size, consisting of four female adult participants, all of whom were Contemporary Commercial Music students from my private voice studio. All data were self-reported, which may introduce bias due to the participants' personal experiences and perceptions. Insufficient literature or studies were available on motor learning in singing and how age affects how we learn.

Direction for the future

Future research should include a larger and more diverse group of participants of different ages, cultural backgrounds, genres, and genders. More motor learning research should be done on singing, especially CCM, and how age affects motor skills learning. This would better equip voice teachers to accommodate a diverse range of students.

Personal learning outcomes

I truly enjoyed learning from my students by interviewing them about their experiences with different types of instruction. Before this study, I only relied on observations to “guess” their learning styles, but hearing their preferences in their own words was truly eye-opening. This experience has motivated me to collaborate more closely with my students and co-construct the learning process moving forward. “Eliciting ideas directly from the students is more likely to motivate and empower them to action” (Sullivan and Rees, 2008, cited by Brown, 2024, p. 3).

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Appendix:

Ethics form

https://drive.google.com/file/d/1ddqwoPPzgSDwcQhfCPRZmAm4YJA0L6sZ/view?usp=drive_link

Consent forms

https://drive.google.com/file/d/17gla9u838UQ0Hln9tuRxTjeHQlhJsC9e/view?usp=drive_link

https://drive.google.com/file/d/18T_juv4_LTE1RC3H5JUaY1Fgydnjxfllj/view?usp=drive_link

https://drive.google.com/file/d/1GfkOOuECBqBlc4sD-Q3vpNZgUM7sGIOi/view?usp=drive_link

Letter of approval

https://drive.google.com/file/d/18xRui3-1IArYLVTef5tCCpMzxhyMgL7N/view?usp=drive_link

