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UNLOCKING US TEACHERS' VOCAL POTENTIAL BY RAISING AWARENESS ABOUT THE BODY-MIND INTERCONNECTEDNESS IN VOICEPILATES TRAINING

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Abstract

Teachers are at high risk of voice disorders, and voice trainings are shown to help to prevent the disorders. This qualitative phenomenological study investigated individual experiences of US teachers (n=5) attending "Teachers' voice with VoicePilates" interventions. Data was collected on participants' VHI (self-reported symptoms of vocal fatigue) and open-ended questionnaires, recordings of pre- and post-training vocal samples taken during the 4 days of the intervention session and 30 days after the interventions started. Interventions consisted of a voice hygiene lecture (30 min) and 2 x 45 minute and 2 x 2 hour group voice trainings. Participants' reflections were compared with the Finnish speech-language pathologists' expert group reviews, and they mainly correlated. All the respondents (n=5) felt that they had been paying close attention and have learnt something new about their voice and how to use it during teaching, describing concrete situations where new vocal and postural skills were consciously used. Results of the preliminary study give indications that teachers' awareness of their voice in teaching situations can be developed with VoicePilates method, thus improving teachers' vocal well-being. This study could offer voice teachers valuable insights in light of recent research in motor learning, hopefully leading to better practice regimens and more effective feedback, the two most important parameters in motor learning.

Keywords: teachers; voice training, subjective evaluation, corporeal awareness, perceptual-motor learning, VoicePilates

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1. Introduction

Teachers are at high risk of voice disorders compared with other occupations; vocal loading, poor acoustics, bad air quality, psychological, emotional, physical and psychosocial aspects contributing to voice disorders (Åhlander et al., 2011). Teachers as professional voice users are expected to be skilled at using their voice, have professional training to support prolonged use of the voice in difficult situations and have the ability to use the voice effectively in a variety of settings and in differing groups and numbers of people (Martin & Darnley 1996). For most teachers, any voice training during their teacher training is minimal, if non-existent, and the provision for voice training remains on an ad hoc basis in most training establishments (ibid). Several studies show the effectiveness of voice trainings for preventing vocal disorders (Ilomäki 2008; Timmermans et al., 2010; Faham et al., 2015). Teachers' voice training needs to be emphasized as a tool to sustain occupational capacity, as preventive care is more efficient than that of treatment of vocal disorders (Ilomäki 2008).

1.1. Stress and the voice

In order for voicing to occur easily and effortlessly, various mental and mechanical components that make up the vocal process need to function at optimum efficiency and be free from tension (Martin & Darnley, 1996). Voice training as perceptual motor learning, having its roots in psychology and kinesiology, is a process, which is inferred (rather than directly observed), that leads to permanent changes in behavior as the result of exposure or practice (Helding, 2015). Voice training involves muscle adjustments for better alignment, breathing, resonance and vocal identity by learning and utilizing both explicit ("know-that") and implicit ("know-how") knowledge (Cuthbertson-Lane, 2009; Helding, 2015; Verdolini, 1997). As muscles and joints throughout the body adjust themselves through sensory, motor and regulatory information to maintain physical balance, tension held anywhere will ultimately affect the voice in terms of quality, health and power (Cuthbertson-Lane, 2009).

Stress is, to some extent, an adaptive response by the body to changes in the environment. If individuals are confronted by a stress response but cannot activate the accompanying physical response, they become impatient, angry and irritated instead. Most thoughts carry an emotion with them and all emotions are reflected in the body. Bodily sensations often trigger thoughts and emotional, mental and physical states are heard in the voice (Ilomäki, 2008; Whitmore, 2009). Concerns, blockages, and inhibitions can be approached through the mind, the body, or the emotions (Whitmore, 2009). Whitmore suggests that persistent stress can be reduced by identifying bodily tensions, by evoking awareness of

the feelings that fuel overwork, and by uncovering mental attitudes such as perfectionism (Whitmore, 2009).

1.2. Psycho-physical habitual patterns

Vocal tract, habitual breathing patterns and physical alignment are closely connected to the emotional centers of the brain, as the nerve pathways in the motor cortex, contributing to communication (eye, facial, middle-ear, jaw, larynx, throat, head-turning muscle centers in the brainstem) are clustered around the ventral vagus nucleus that modulates the autonomic nervous system (Weir Ouston, 2009). This vagus nerve inhibits the extremes of the fight/flight response, becoming an engine for homeostasis; the balanced equilibrium of the body (Scaer, 2012).

Cuthbertson-Lane (2009) argues that chronic tension is both a result and a reflection of one's overall emotional health, preventing one from experiencing a free and healthy voice. A physical habit begins with an in-the-moment reaction to stimulus that one learns to numb or avoid by assuming a certain shape or affecting a certain behavior. If the discomfort persists, the behavior becomes a self-conditioned behavior. Training the body to learn a new behavior is the basis of voice teachers' work. However, if not acknowledging that there are reasons for these self-conditioned behaviors – often, emotional reasons – inculcating the new behavior may not necessarily create permanent shifts in the pattern. When the subsequent charge of the trauma remains unleashed, it results in rigid, contracted tissue throughout the body, affecting the pattern of body use. According to Cuthbertson-Lane (2009), over a prolonged period of time these patterns become ingrained in the system, as the brain forges new neural pathways as well as the cells and fibres of the connective tissue of the body align themselves along the lines of tensions in the body, responding by changing its shape in order to maintain overall balance and harmony in the body, becoming manifested as one's physical structure. Voice training attempts to achieve psycho-physical change and can be physically, emotionally and psychologically therapeutic, though it is not psychotherapy (Weir Ouston, 2009).

2. Purpose of the study

This study focuses on the psychological, emotional and vocal effects of VoicePilates (VP) training on a sample of US teachers, offering voice teachers valuable insights in light of recent research in motor learning, hopefully leading to better practice regimens and more effective feedback, the two most important parameters in motor learning (Helding, 2015).

3. Research Questions

- i. How do the participating teachers evaluate their vocal abilities, effectiveness, goals and effects of working environments to their vocal workload and the health of their voice?
- ii. What does good teachers' voice mean for the participants?
- iii. How do participants' self-evaluations about the changes in their own voice correlate with speech-language pathologists' reports?

4. Research background and design

A motor learning theory based practical training program "Teachers voice", with a VP methodology was developed and piloted with master degree students of the Institute of Educational Sciences of the University of Tallinn, Estonia in 2005 to enhance teachers' vocal well-being. The six tenets of VP are: corporeal awareness; posture alignment; balanced speech; context-based simulation exercises; video training and reflective feedback (Vainio, 2018a). In earlier longitudinal studies (Vainio, 2018a), the effects of corporeal awareness and posture alignment of VP on Finnish teachers, and the perceptions of Estonian teachers about VP (2018b) were studied.

4.1. Research methods and participants

This qualitative phenomenological study was an investigation of the individual experiences of student teachers (N=5) of the Department of Communication studies of a higher education institute in the US, who participated in a 5-day Graduated Teaching Associate Orientation week with a "Teachers voice with VoicePilates" training session, being part of the week. After the Orientation, participants implemented new voice skills in their weekly 2 x 2 hours Public speaking courses. After 30 days, a follow-up voice session was organized. The study served to discover how teachers interpreted and defined perceptions about their own voice in voice training and in their own teaching. This study was conducted in the US, using the Finnish-Estonian voice training method. In the U.S, teaching communication skills and elocution starts considerably earlier than in Europe, approximately at the daycare and pre-school level and oral communication skills are included in the core curriculum in most U.S. universities, which is not the case in Europe. Hence, speaking and teaching tempo can be expected to be faster in the U.S than in Finland and Estonia, due to cultural differences.

4.2. Data Collection

This study collected data on participants' self-reported symptoms of vocal fatigue through two questionnaires: the Voice Handicap Index questionnaire (VHI), and an open-ended voice-related questionnaire, as well as participants' pre- and post-training vocal samples which were done before and during the 4 days of training as well as 30 days (follow up) after the VP interventions began. The vocal samples were recorded 4 times: on the first day of training as the "First reflection"; on the second day of training during participants' so-called 'micro-teachings' to the jury; and on the third day of training. Before the training started, a pre-recording was done (vowel and text reading samples, each in individual sessions with the trainer). After 30 days, on the follow-up day, as 4 samples from this day: 1) the voice exercises during the training, all group exercising together, 2) the 'Post Reflection' during the training, and 3) the vowel-exercise and 4) text-reading each participant (individually with trainer) right after the follow-up training session.

The Voice Handicap Index questionnaire (VHI), is used to assess the participants' judgment about the relative functional, emotional, and psychosocial impact of their voice disorders in daily activities before the course for the comparison with specialists' reports. This self-administrated questionnaire consisting of 30 items was distributed among 3 domains: functional (F), physical (P), and emotional (E), with ranges from 0-120, where higher scores suggest a more severe perceived vocal handicap (Jacobson et al., 1997).

The items in the open-ended questionnaires were: 1) What I think about my voice, its strengths and challenges; 2) What does good teachers' voice mean for me? 3) What kind of voice would I like to have as a teacher? 4) Identify your own "voice goals". The questions for the post reflection were: 1) What do I think about my voice now? 2) My voice goals now.

Interventions consisted of a voice hygiene lecture (30 min) and 2 x 45 minutes and 2 x 2 hours group voice trainings. The participants' reflections and trainer's evaluations were compared with the Finnish SLP's expert group reviews for the impartial objective evaluation. Voice recordings were done using the iPad and iPhone video. For participants' self-evaluation, written reflective journals, in the mode of learning diary, about the condition of their own voice and its daily usage were used. Permission for this research was obtained from the hosting university and University of Helsinki. Participation was voluntary, and the participants had an opportunity to withdraw from it at any time, and also to ask for more detailed information about the research and course. All participants received written information about research objectives and goals. The research data was handled and preserved according to Finnish Personal Data Act (523/1999). All measurements and statistical analyses of the data were done without personal information and names, only with randomly picked number codes. To protect

the confidentiality of the participants, pseudonyms were used to de-identify the academic institution. All data and materials were saved in locked storage space.

4.3. VoicePilates in the US

“Teachers voice with VoicePilates” training session consisted of indirect training, direct (5.5 hours) experiential learning training and mid-assignments. Indirect training consisted of: 1) written material about vocal hygiene, the role of the voice and diverse vocal requirements for teachers’ work, delivered before the training, and 2) a 30 minute lecture. Direct experiential learning, building self-awareness of the voice through the somatic self-discovery of physical, sensory, auditory perceptions, consisted of 4 sections of exercises: 1) The Reflection, 2) The Body, 3) The Voice, 4) The Simulation (Gilman, et al. 2014). Mid-assignments included the VHI voice questionnaire; learning diary about the usage and sensations of own voice; watching and reflecting own training videos and practicing the exercises.

‘The Reflection’ was divided into 3 parts. In ‘The First Reflection’, participants gave feedback and evaluations about their own voice, identifying own voice goals (15 minutes on the first day) while in ‘The Last Reflection’, newly learned vocal and postural skills and experienced perceptions were discussed, as well as peer feedback given and received (30 minutes on the third day). The ‘Final Reflection’ identified the learning experiences from the voice course and the whole process (Follow-up-day). ‘The Body’ session provided customized training of postural Pilates-based exercises for training the ergonomic position of the spine, helping to decrease the muscle tension (duration 2 hour: 15 minutes training on the first day, 1 hour on the third day and 45 minutes on the fourth day). ‘The Voice’ session (duration 2 hours: 15 minutes training on the first day, 30 minutes on the third day and 1 hour on the fourth day) helped with gaining strength, resistance and ‘listener-friendliness’ of the voice through customized voice exercises. In ‘The Simulation’ session (duration 30 minutes: 15 minutes training on the third day and fourth day) participants trained in simulated working situations with simplified greetings and participated in a real-life voice situation in a mock faculty meeting. On the Follow-up day after the 30 days, the same Body, Voice and Simulation exercises were delivered.

4.4. Analysis

The complexity of voice production partially explains the dearth of research on the connection between voice studies, psychology and perceptual motor learning theory (Helding, 2015). As part of the phenomenological research process, reflective journals and open-ended

questionnaires were used. Interpretative phenomenological analysis (IPA) of data, an approach to psychological research with an idiographic focus, aims to offer insights, into how a given person, in a given context, makes sense of a given phenomenon. As Czerniak and Schriver (1994) state, “phenomenological researchers could delineate all ‘meaning units’ through the text, code the units that are relevant to the research questions, and cluster themes to form descriptive conclusions” (p.79). IPA was chosen as the data analysis tool because of the emphasis it places on in-depth understanding of personal experience, also that data obtained from any appropriate form of written texts would have phenomenological undertones. Previous studies with similar phenomenological traces and nuances concurring with this study have been reported by researchers from various fields (see Kaspar & Stenfert Kroese, 2017; Hellemans et al., 2011; Reardon & Grogan, 2011).

5. Results

In this research, 5 case studies are explored, using the results of the Voice Handicap Index questionnaire (VHI), open-ended questionnaires and voice diaries, compared with the trainer’s and speech pathologists’ reports.

The analysis is presented according to the Research Questions.

5.1. How do participating teachers evaluate their vocal abilities, effectiveness, goals and effects of working environments to vocal workload and the health of their voice?

Table 1. Teachers’ evaluations of their vocal abilities, goals and perceptions of own voice when entering the course

Case	VHI before the training	What I think about my voice	Identify own voice goals
Rachel	Total score 38: voice is difficult to hear, especially in noise and from far, has to repeat in 1-2-1:s, left out conversations, running out of air, sound varies, have to strain, effort, tries to sound different, often tense, annoyed, embarrassed about the voice, sometimes others don’t understand	voice too quiet, kind and sweet	need to speak up and to be stronger
Ryan	Total score 17: voice is difficult to hear, especially in noise, uses less phone because of voice; avoids groups, has to repeat in 1-2-1:s, difficulties in social life	voice sounds ‘too gay’	to let go of the pre-conceived idea about what people think of my voice should sound and just be comfortable with my voice
Kit	Total score 40: uses less phone because of voice; avoids groups, has to repeat in 1-2-1:s, voice sound varies, can be creaky, dry; tries to sound different; is tense because of that	voice low, unclear and monotone, a lot of mumbling; perceived “too harsh” in a mentoring; struggling to find my ‘own voice’	more vocal variety

Pam	Total score 34: voice is difficult to hear, especially in noise and from far, avoids groups, has to repeat, is left out of conversations, therefore less outgoing, annoyed	high-pitched voice, especially when recorded, not when listened to	gain authority, still sound nice, approachable
Kimmy	Total score 13: voice is difficult to hear, has to repeat on 1-2-1:s, runs out of air; clarity of the voice is unpredictable; voice is worse in evenings, feels therefore annoyed	voice fairly on the louder side, knows how to project the voice, consonants not completely pronounced; with anxiety using fillers, 'nervous laugh'	gain authority, confidence, still comfortable, comforting, not afraid to speak to students to equal gender level

Two participants had score ranges of 0-30 responses (mild severity) and 3 participants had score ranges of 31-60 (moderate severity). This implies that participants did not perceive that they had any major voice challenges or disorders. Table 1 shows the main concerns participants had in their VHI's about their voice identity and voice goals.

5.2. What is good teachers' voice?

Table 2. What good teachers' voice means to me

Participant	Good teacher's voice means for me
Rachel	almost calming, accepting people's words what they have to say; strong voice, maintaining the kindness in it
Ryan	a strong, also a compassionate voice, one that has inflection, not monotone, adding some variety and spice
Kit	being assertive in confident way, still being caring, welcoming; introducing, using vocal variety
Pam	authority to demand your attention, makes people want to listen, still very nice and approachable, not too demanding
Kimmy	confidence, knows what's she's doing, nobody could question her or her teaching, still being able to be comfortable; comforting, not afraid to speak to students to equal gender level; authoritative

It was interesting that participants' ideal teacher's voice was the same they wanted to achieve for themselves. Shewell (2009) argues that listeners often have strong feelings about which voices they like and dislike. Hollien (2000) points out that 'what might be ideal for one situation, might not be suitable for another situation. A voice is influenced by personality, context, environment, style of use and many other factors.

5.3. How do participants' self-evaluations correlate with the reports of SLTs?

Interjudge reliability is recognized as being problematic in perceptual voice schemes (Webb et al. 2004). Kreiman et al. (1993, cited in Shewell, 2009) wrote of the need for reference voices as 'fixed external standards' or 'explicitly anchored paradigms' to avoid the

fact that listeners tend to rate voice qualities by using personal internal standards. The therapist often deals with very abnormal voice qualities, and may hear a speaker's mild degree of roughness as being within a normal range of vocal qualities and needing no direct work. 3 Finnish SLTs, who reviewed the pre- and post-test recordings of this study, noticed that all voices had a certain amount of nasality, which they thought was a cultural-based detail of US voice. After listening to several voice examples, Finnish SLTs mentioned that they "calibrated" themselves better to the US way of speaking.

Table 3. The comparison of participants' self-evaluations with the SLT's reports

Case	What do I think about my voice after the course	Changes noticed by SPLs after the training
Rachel	Past challenges came from a lack of confidence in my posture, also putting myself into awkward rotated posture situations, worrying about taking up too much room in the conversation. Now I am no longer worried about not sounding kind or clear enough, that was never really the problem, but it has always been the volume. I thought, if I was loud, I would sound aggressive, but it's not the case. It makes me feel: "I can fix this. It's more attainable"	Chest register in use; more even and balanced pitch, intonation, speech energy; sounds persuasive, clear, peaceful, with appropriate tempo, easy to understand and pleasant to listen, variable in melody and intonation and interesting to follow. The body stays easily relaxed in a good sitting position, and the small head tilting are not interfering the vocal usage as earlier. Apparently this participant has a good audio-kinesthetical ability to receive guidance, significant development has occurred taking into account a relatively short time between the pre- and post-tests.
Ryan	Now I love to use my body in the space, especially during group work and quizzes. I enjoyed 'tapping into my deep voice', now I'm enjoying singing more, knowing I can use my low registry. I have been taking 'baby steps' on using of 'new, deep, strong voice', creating habits towards it. When I am mindful of 'owning my space', people notice it, in some cases they 'go out of my way', I like it.	The breathing is more peaceful and balanced, coming from the abdominal, the shoulders do not rise with breathing as they did before. The consonants better pronounced, vowels resonate more widely, sound considerably steady, controlled, clear, and the whole text is easier to understand. The head is already quite peacefully placed, neck being long, chin down, resulting as balanced sound. Voice has become more 'masculine'.
Kit	I am more open and friendly, not just the voice, but overall, and also not mumbling that much. I mostly worked on a posture and 'just being more aware of myself'. I continue trying to talk in slower pace, 'making sure to be heard'. The training gave me 'the confidence that I had searching for so many years'. I am just more aware and kind, less self-conscious, and trusting that "it's all going to come together"	Widely resonant, beautiful, easier, clearer and cleaner sound, coming enthusiastically, convincingly, cheerfully, inspirationally from the whole 'instrument', balance is found. The pitch remains relatively even, and the energy of speech are more evenly divided in the body, not just in the head, body and diaphragm are more active and in use. The vowels sound even and strong, mild head tilting is still left, but larynx more relaxed. The change between pre- and post-tests is impressive. In the pre-test the neck, larynx and vocal cords were under pressure due to sloped position, respiratory muscles passive, listening needed a lot of concentration due to big uncontrolled changes in volume and pitch with ends of the words disappearing.

Pam	I am not pronouncing well due to my accent, I need to improve. Although now I am speaking slower, I need to speak even more slower. I am concentrating also on my posture, it's very interesting feeling, how much muscle I just have to use to have a correct straight posture, it's been more comfortable.	More peaceful, evenly way of speaking with natural pitch changes and better rhythm. In vowel-exercises she doesn't yet believe in herself, 'gives up' right before the end of the sentence, causing breathiness and the posture is slightly slumping. Post-test text reading more convincing, clear. She wants to lower her voice, resulting in some vocal fry. Non-ergonomic rolling of her chair with slight insecurity and anxiety and pelvic area exaggerated movement, still with nice liveliness in the spine. She concentrates better in her voice
Kimmy	I found clearly a deeper side of my voice, very interesting! I am also more clear, when speaking in front of class, it's very odd, as I didn't do anything consciously. There's the difference between normal- and teacher-voice. Correcting, re-mapping ideas of posture were difficult, especially while walking, because of the heavy weight of backpack. I re-planted my feet, if not standing in a confident manner and tried to take more space, as it helped me to be more confident and assert my "teacherly power", authority. The biggest thing I learned was intentionally revealing the feeling to relax and be free with my voice free in my space	The sound tightness has decreased, chest resonance increased and speech energy is more evenly balanced throughout the body, although some energy still negatively focusing on the larynx area. The voice is lower than earlier, balanced, widely resonating, convincing, as it uses the 'excitement' and the energy especially in the simulation exercise. The same change in vowel exercises, when compared with the pre-tests. In reading the text is clearer, the relaxed work of the jaw is helping the jaw stay more free, not any more 'fixed' in smile-position. It is still necessary to pay attention to embody all parts of the supported voice production to avoid the exaggerated breaths. Bending the head while reading is still causing tension to the neck area and may in part explain a slight vocal fry. Voice usage is in the end of the session more peaceful and pleasant

SLTs' results mainly correlate with the participants' self-evaluations. In Rachel's case, she needed to improve her posture, and also to use more volume, while, at the same time, not worrying about sounding too aggressive. This resulted in more balance in the overall body usage, deeper resonating voice, which the SLTs also noticed. In Ryan's case, he started to use a more active stance which resulted in a deeper and stronger voice, which the SLTs picked up. In Kit's case, she points out her increased self-confidence and 'finding her own voice'. It resulted as better posture, deeper and stronger, but also more balanced voice, which SLTs agreed with. In Pam's case, her insecurity comes through also in her self-reflection, but she notices the postural and speaking tempo changes that have occurred. Also, SLTs notice these small changes as well as her being 'in the process' of change, still needed to continue. In Kimmy's case, she was perhaps one of the most experienced voice users in the group and she found some of the results surprising, as the training methods were new to her. As a trainer, I had a feeling, that these results came to her 'accidentally' as she did not expect these. The SLTs also highlight some improvement, as well as some areas she still needs to work on. The specific listening needed for accurate perceptual analysis is admittedly hard to learn and hard to do. Additionally, Shewell (2009) points out that in training courses, voice teachers and therapists struggle together to identify the significant sound changes in their own and others' voices, but,

once the analysis is done, the voice is better understood and the direction for work immediately becomes clearer. In this study, all three different written and analyzed viewpoints: the participants', the SLTs' and the trainer-researcher's, provide the basis for the following research in voice training and its assessments.

6. Conclusions

Before teaching in the US, my hypothesis was that the main results in teachers' voice would be found in the area of balanced speech, using less energy for voice production in the larynx area. Awareness of body posture, breathing, "deeper" voice exercises of VP can possibly help decrease the pressure and hyperfunctionality on the vocal folds, caused by fast speaking tempo, thus improving the voice ergonomics as more volume and vocal outcome can be achieved with less muscle tension and effort, also producing a more listener-friendly sound (called as the "softer" 'tone' or 'timbre' of the voice) (Vainio 2018a). As this hypothesis was found to be true, US teachers were very interested about this health aspect of their vocal usage. In addition, while all the participants pointed this out as being a 'technical' part of their learning, there was also the 'empowering' part of the learning, which occurred after their awareness of their vocal and postural challenges, but particularly of their strengths.

Gallway states that coaching is unlocking people's potential to maximize their own performance (Whitmore 2009). The responsibility of the coach is to raise participants' awareness about the interconnectedness of their body and mind in coaching, gathering and clearly perceiving the relevant facts, information, and the ability to determine what is relevant, as well as engaging in revealing and re-training physical, mental and emotional habits (Whitmore 2009). This is evident in Pam who claimed she needed the feedback from the coach: *'I have a tendency to overthink my speaking tempo and posture, as there is a lot going on for me as a new teacher and I'm not sure how much improvement there has been'*.

Awareness also encompasses self-awareness, in particular recognizing when and how emotions or desires distort one's own perception (Whitmore 2009). Participants used a lot of emotional language, as *'It makes me feel: "I can fix this. It's more attainable"*. Whitmore argues that our own normal level of awareness is relatively low, being able to develop only partially effective methods that can consolidate into bad habits. He states that the awareness raising function of the expert-coach is indispensable – at least until or unless the participant develops the skill of self-coaching, which opens the door to continuous self-improvement and discovery (Whitmore, 2009). Kimmy describes her awareness process in her future voice goals: *'I promise to be hyperaware of situations when I'm feeling nervous or I'm not sure about the situation, and I will definitely be aware of, where I can stop to take a breath, and*

keep going in a way that is comfortable for me, and also comfortable for my audience, it's just about finding this balance and keeping this confidence and staying true to who I am'. When kinesthetic awareness is focused on a movement, as a voice production, the immediate discomforts and corresponding inefficiencies in that movement are reduced and soon eliminated. Using oneself in space, being fully embodied, was a life-changing experience, as Ryan told: 'When I am mindful of 'owning my space', people notice it, in some cases they 'go out of my way', I like it.' Using the body also helped with severe pain, as Pam and Kimmy explained: 'The posture is very important, not only for a voice, but also helps when I'm walking, with my back and knee pain, not leaning on one side'.

In voice training, deep-seated defensive or habitual unconscious neuromuscular responses require re-programming, engendering a conscious or unconscious re-alignment of self-image and habitual communication behaviors (Weir Ouston 2009). Kit describes the process: *'I took a different approach than other GTAs, not thinking only that "Ok, these assignments lead to a purpose", but more of "what's the purpose", not that "how do we fix your voice", instead "I had it". 'Developing my voice helped me to teach, but also helped me personally', 'I could see and feel the change, and even if I haven't grown that much in vocally, psychologically I feel like I have grown tremendously', 'I'm glad I've had this experience improving a small part not only my Teacher's identity, but also my personal identity'.*

One's vocal image can be very different compared to how others perceive the person. If for example, one's own image is *'sounding kind or clear enough'*, the speech energy is activated in upper parts of the body, mouth and facial (smile) area, contributing to *'kind'* and *'clear'* sounds. Changing the habits will affect also the vocal image, as in Rachel's case: *'Now I am no longer worried about not sounding kind or clear enough, that was never really the problem, but it has always been the volume. I thought, if I was loud, I would sound aggressive, but it's not the case'.*

According to Whitmore (2009), every time we experience ourselves stretching to a level we have never before experienced in exertion or in courage, we reach new heights in our senses, accentuated by the flow of adrenalin. In practice, the distinction between performance, learning, and enjoyment becomes blurred, and at the apex of this merger lies what is often described as the peak experience (Whitmore, 2009), as Ryan (one of the participants) explains: *'Original voice goal of being so concerned about how my voice sounds, has changed: 'now I'm more with this empowerment of nice deep voice', 'start to playing around', 'I'm taking*

back what have oppressed me, and turning it into my power'. This entire time has been so powerful and mind blowing'.

The coaching alternative of raising awareness surfaces and highlights the individual attributes of the body and mind, while, at the same time, building the ability and the confidence to improve without another's prescription, building self-reliance, belief and responsibility, as Kit elaborates:

I was just thinking about my posture, and holding my head and I feel as I'm improved, I feel like owning the class and feeling very comfortable there', 'it's just really like a confidence boost'.

Participants also gave themselves clear next goals, as in Rachel's case: *'Continuing working on how my voice resonates – particularly with a deeper tone, maintaining my kindness in my voice, keep working on with assertiveness, and grounding myself to project more. Also not putting myself into a weird positions: being more grounded in my stance, projection, allowing more silence, not talking to my power point or the white board, offer slower and deeper instructions, being more definitive in my own statements, maintaining power through the end of my sentences, and learning each student's name'.*

Also, to be able to use coaching successfully, the coach needs to adopt a far more optimistic view than usual of the dormant capability of all participants, thinking of participants in terms of their potential, not their performance. In Kit's case, I, as the trainer, saw a lot of potential in her slumped posture and thus, unused vocal capacity. In the end of training Kit reflected: *'I am more open and friendly, not just the voice, but overall, and also not mumbling that much. I mostly worked on a posture and 'just being more aware of myself'. I continue trying to talk in slower pace, 'making sure to be heard'. The training gave me 'the confidence that I had searching for so many years'. I am just more aware and kind, less self-conscious, and trusting that "it's all going to come together". She explains how she does it: 'Just as being aware of those things, little by little I find myself on the weekends, just walking around, and saying "Hallo" exercise in deep voice. People think I'm crazy'.*

All participants felt that, as a result of the course, the volume of their voice, and thus, the effect of the voice in the classroom had improved, and that had positive effects on students. They felt that this type of voice made their speaking more ergonomic, influential and 'listener-friendly', also protecting the voice from overloading and helping to maintain the good condition of the voice during the long career. They also found it important, that they will be able to spread the vocal knowledge to their students when teaching communication skills. As for future trainings, participants pointed out, that '5 elements of voice' (Love 2007) would be important to teach all teachers, as well as to organize online video trainings. Participants also

had a message for the other potential participants: “Don’t be afraid of either looking silly or going out even more, reaching a little further, or being louder, or getting a sort of uninhibited feeling of how to get the most out of these lessons’. Rachel elaborated: ‘It was incredible to see how each of my colleagues had improved towards the goals set at the beginning of this journey, also really wonderful to hear their perceptions of my growth’. Based on that, teachers’ voice course can help to enhance the vocal health of US teachers throughout their working career.

7. Implications

Based on this study, teachers’ voice courses can help to enhance the vocal health of US teachers throughout their working career. This study has highlighted the importance of voice training for teachers, whose primary mode of knowledge transmission is the voice. This training will improve and sustain the quality and duration of their voice throughout their long career. Additionally, voice training can even improve the quality of classroom discourse, personal interaction, and even personal image and self-esteem of teachers. This study will help to plug the gap in what can be considered a crucial area of research into teacher training that is mostly overlooked, to the detriment of the teachers’ professional and personal health.

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