

## **EUROPEAN VOCAL PEDAGOGY – DIGITAL RESOURCES TECHNOLOGY**

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#### **Digital Technology and Voice Training**

We are here to address what must now be one of our common concerns as voice teachers. This is the story of my own approach to the subject matter. The project and therefore this week, is about building bridges and crossing boundaries in more ways than one. During this week we will be dealing with and learning about many different kinds of technologies as they apply to singing and vocal pedagogy. Voice science and software developers have done their job: now it is up to us as voice teachers, to approach this subject from the pedagogical viewpoint. We need to build bridges between traditional methods, the knowledge of recent research and the use of technology. We have already left the boundaries of our own teaching studios and most of us – of our own countries. And for most of us, the boundary we are about to cross this week brings us into very new territory.

#### **Three approaches to teaching singing**

Even voice researchers and computer freaks know, that traditional methods of teaching singing have functioned very well over many centuries. One-to-one vocal pedagogy has had different phases as the cultural idea of voice use has gone through aesthetic changes, but nothing has, and nothing will substitute for the teacher-student based learning situation. All methods, styles and materials are tools within this context. This about extending our repertoire of teaching tools. But first let's go back a step.

- **“Smelling the roses” – Using Traditional Imagery**

Until we actually knew how the vocal instrument functions, much of voice teaching was based on healthy physical and artistic intuition of both teachers and student and on their ability to communicate through images. We have whole repertoire of “imagine that” or “as if” images address the imagination or physical sensations of sound. One of the most famous is the challenge to inhale and “imagine you are smelling a rose”. The use of images remains a basic component of teaching both technique and artistic expression, and we will not cease using this method. But the information we receive this way is subjective, both for teacher and student and therefore, has its limits. The vocabulary is often inadequate. How does it help a student who cannot imagine how his voice could sound different, or how to activate the sensations the teacher is asking for? This vocabulary depends on teacher and student having similar cultural and language backgrounds and is inadequate when we are dealing with minimal language proficiency. Most certainly, it will not solve vocal problems or give answers to an inquisitive student who wants to explore body imaging. In the end, many students taught this way will sing well, but are they also equipped for the inevitable problems?

- **The singing instrument – Using Physiology**

Since Manuel Garcia invented the laryngeal mirror, we have been able to see the vocal lips in action. Science and medicine have never stopped fascinating us with further details on the singing instrument. Today, we know how the voice functions, understand the laws governing it and can identify the effect certain muscular patterns have on vocal sound. The medical profession has provided us with diagnostic possibilities and operative and therapeutic procedures for vocal disorders of which Enrico Caruso, Jenny Lind, and Maria Malibran never even dreamt of in their wildest imagination.

Clear physiological and anatomical information is available in many understandable forms and many of us have integrated this knowledge integral part of good voice teaching. We now include physiology and voice research themes in our conferences and education programmes on a regular basis. In terms of the history of vocal pedagogy, this is a very recent development. I have been in the profession long enough to remember heated discussions on how much information a student needs, when should we give it to him, and how. Today it is self-evident to a great majority of us, that this is a very important addition to our repertoire and our discussions of 15 years ago totally passé. But this approach too has its limits. Knowing how the voice functions makes neither a good singer nor a good teacher. Although it unlocks more reliable vocal quality, it does not release the secrets of musicality or an artistic performance.

- **The Digital Way – Using Technological Assistants**

Successful teaching must be the sum of many parts. The new tools for voice analysis that we will be learning about will also not of themselves lead to artistic performance or healthy vocal sound. Other available materials such as recording devices, multi-function telephones, the possibility of creating an orchestra via computer, playback materials for both classical and popular music singers, not to mention Internet access to libraries, transposition programmes, recordings, and software or downloads for many purposes will not solve our technical problems nor will they compensate for inappropriate use or inadequate teaching.

The good thing is, however, that they too have their limits. Voice analysis will tell us what should change, but the computer will not tell the individual student how to change his sound production in order to achieve a better, more efficiently produced sound. Recorded lessons do not always lead to better results and few of us have easy access to a studio computer anyway. What is happening, though, and what makes us feel insecure, is the challenge to the role of the teacher. Our profession is – and should be changing, possibly more and more rapidly than ever before.

On the questionnaires, all of you indicated that you felt voice analysis would be helpful to you and your colleagues, but only one person uses it. Why? Voice researchers, software developers and the Internet have opened doors to a third exciting new complex of teaching tools.

### **Building Bridges: the next step**

Voice teachers who are finding ways to integrate these new tools effectively into their teaching, are still islands in the sea of teachers. Similarly, voice researchers have often felt their isolation from the teaching community.

Workshops presenting research results have become commonplace at our conferences, and we communicate by email and Skype but something has been missing. We must admit, that we have been reluctant to accept and integrate them into our teaching. As a member of a professional organisation, I have heard many explanations of the software for voice analysis, for example, and I learned a little bit each time. But I often found myself lost in this new world of unfamiliar vocabulary and interesting images, but I couldn't connect them to my everyday work in the studio. In the voice science section of one documentation, I found the following typical protokoll:

*“The time passed very quickly and the discussion on how objective voice analysis could be integrated into a pedagogy concept did not lead to concrete results.”*

*Christa M. Heilmann, Stuttgarter Stimmtage, 2002*

This gives rise to several questions:

- Why is this subject still in the section on voice science?
- What is the missing link? Where do I begin to look?
- Can't it be simpler? At least at the beginning?

One thing is clear: Scientists, researchers and doctors are fascinated by different things and work at a different pace than we do. They will not answer our pedagogical questions. But they have given us a wonderful gift – and in a way, we visit them on their island, accept the gift, but go home, leaving it there like an Christmas present that wasn't on our Santa's list. We need to take it with us and figure out how to use it!

And how can we learn to use it? One answer is really surprisingly simple. No one learned to drive car by watching my father, nor by listening to his explanations, but by getting behind the wheel myself. We are here to get our hands on the wheel. It is the only way. Of course: in using voice analysis, the more I know about the images I see, the more possibilities I will find for using it. I also hear more in an opera, song or symphony that I have performed than I do in the one I am listening to for the first time. But I gained that knowledge by getting involved, getting inside the music, making mistakes and trying again.

Starting something new means that we need the courage to make mistakes, ask dumb or naive questions and maybe even to look silly! It is a challenge to our understanding of our role, and as I see it – we are curious but very insecure. But once more, let's face it: we already feel insecure because we have a bit of a guilty conscience for not using it. The courage to just start doing it, could only mean creating a change for the better!

Finally, I have concluded that initially, my students and I don't need to know a lot in order to find effective uses for these tools. They do work on an initially simple basis.

### **The Third Approach**

Why is this important ?

- Most of us are dealing with the young generation.

Our children and student-aged youths have already grown up with technology at their fingertips. University graduates – that is, the next generation of teachers(!) are totally computer literate and at home on the internet and with a search machine. They are very differently trained in visualization than my generation, for example. And for them, music is ever-present as are SMS messages, finding interesting videos on YouTube or making a spontaneous video recording as easy as picking up your mobile phone. A traditional voice lesson must seem a relic of the past to our students – it may be a change from their world, but it feels like going through a museum.

As their teachers, we need to be aware of the fact, that our students are not waiting for us: they are already using these tools. Let's not fool ourselves: many of them learn their music via YouTube and they post lessons or concert performances on the internet. But what criteria do they have, for the quality and usefulness of recordings or software? How do they know which materials are well-founded and which are not? Is it not a comfortable excuse to leave it up to the younger generation to sort through the possibilities by trial and error? Should we really leave it up to them? After all, we all drive a car, take a train or plane and use GPS without even thinking about it. If we aren't careful, we will miss the plane!

Technology for voice analysis, for example, has three important characteristics.

- It offers objectivity.

Technology doesn't take care of the relationship between me and my student, but it does offer an objective picture of vocal sound, for example: my consonants are this big – my teachers' are THIS big! There's no arguing with the picture! It gives the teacher and the student the same information and makes the student curious about changing his singing.

- It reinforces my teaching and helps build trust.

How often have you asked a student to work at developing a better legato, being more precise about onset or entry on time with the piano? Showing it to him on the screen can be very effective in building trust when it reinforces what we say.

- It extends my repertoire of possibilities.

In my own studio, I finally had the courage to have the computer consistently available over the last months with the voice analysis programme open and running. One of my students recently drew my attention to the fact that my own imaging of the students' voices has been

changing. She noted that I now often seem to have a mental image from the screen running in my mind when I listen to a student. So it's not always the student who uses the software – it can also change my perception of a students' voice. It extends my possibilities.

### WWWHW?\*

Student-oriented teaching asks: What, When, Why and How for Whom? "I teach, therefore you learn....or do you?" is a thought-provoking video I found on YouTube. It is not self-evident that I teach so my student can learn – with or without technology. These new tools force us to reconsider many factors about our teaching. As I asked my students to help me, I found myself posing this question again and again. It is a favourite quote from one of my colleagues, Gerhard Faulstich: "What, when, why and how for whom?"

### Case studies

- *"That means nothing to me and I don't want to know anything about it!"*

Why, for example, did Student A flatly tell me "That means absolutely nothing to me and I don't want to know anything about it!" but another is fascinated and helped by the moving lines of a voice analysis programme?

- *"I make holes!"*- or the legato question

Student B and I both wished for a true legato for an Italian opera aria. By nature, her voice has a fluid sound and I couldn't understand the lack of legato or seem able to explain to her what was missing. One day she noticed the correlation between the lines on the screen and her singing and asked what it meant. She is a foreign student with limited language proficiency, so I said only, "That is like a picture of your voice." As we continued, she was fascinated by the lines. At one point, I demonstrated the phrase. As she tried again, her eyes got bigger and bigger: "Oh, I make holes!" she said, "You make lines! Once more!" For her, seeing the image was worth the proverbial thousand words of which she understood maybe 50%. For that reason, I explained nothing of what the different lines and colours and white spots were about. She soon asked if the changes in the colours meant she was doing the right thing.

The next step was to ask her to divide her attention between the image she was seeing and her physical sensations. We ended the lesson by defining the new sensations and she went off to practise. I was sceptical, but after checking the images during the next couple of lessons, she had internalized what she had learned. Now I just say "Make lines, not holes!" We laugh and she knows what I mean – and above all, what to do about it. She has taken the software home and practises effectively with it. By the way, she records her lessons regularly, but I think it may have helped her learn German more than it really helped her learn singing.

- *"Well, they look like bricks!"* or the dynamic question

Student C thought she was doing a wonderful job of crescendo-decrescendo. I didn't. Using the amplitude section of the software, I asked her to sing and describe the tones he saw. She came up with "Well, they look like building bricks!" In fact, he was not doing what he thought he was doing! I suggested that she imitate the shape of the standard crescendo-decrescendo signs used in classical notation. The physical response was immediate. An advanced student, not only did she recognize that his support and tone quality collapsed immediately after the top of the crescendo, but she also had concrete help in judging her own singing and changing the pattern.

Voice analysis, for example, will give us information but it cannot tell the student how to achieve the desired result, which change to make, or if what he/she is changing is the right thing to do.

- YouTube: The energy question

Student D had a chronic lack of physical and emotional energy, in other words, he was lazy. Energizing exercises lasted until the end of the lesson, but we started at the same place each time. One day he came into a lesson and I sensed after the first phrase that something had changed. When I asked what had happened, he replied, "I was thinking about what you said about my

energy so I spent a lot of time on YouTube over the weekend, looking at all kinds of videos – singers, instrumentalists, men, women, conductors. It was a revelation - it's A LOT!" I would have never dreamt of giving him such an assignment, but believe me: someone else will get it now!

- What do I hear? – Listening to the recorded lesson

Student E faithfully recorded every lesson and practised with the recording - until we ran into an impasse. She was overcontrolled, tense, concerned with details and missing the bigger picture. She was also getting impatient about her development and I was doubting whether I was the right teacher for her. I asked how she learns her material for other subjects. "Oh, I learn everything by writing it down!" she said. It was suddenly clear to me, that the recording was the wrong approach for her. We agreed that she would not record the lessons but simply write down the three most important things she remembered after the lesson, trusting herself to forget the rest! This has proved a much more effective approach for her.

### **First answers to the questions of digital technology**

My initial answers to the question of digital technology are clear:

- It is here and here to stay: Digital technology is already part of our lives and our teaching. It is not going away.
- Digital technology has many possibilities and applications.
- Using technology effectively can be relatively simple.
- Technology opens new doors but the possibility of using it simply doesn't release me from the responsibility to learn how to use it effectively and more extensively. The more I know, the more I understand, the more doors it will open to seeing, understanding and interpreting the images.
- Students have ideas. Our young students have grown up with technology and will come up with very good and useful ideas on their own. Some of them will be the right ones.
- Therefore we need a methodology for its use. We need literature and encouraging continuing education programmes.

Technology is not a substitute for a teacher but a challenge to our development.

### **WWHW?\* What, When, Why, and How for Whom?**

How can I know my student? What is his learning style and strategy? Is there a well-founded learning typology that is helpful?

These simple case studies point a secondary theme for our project sessions: is there information about learning styles, typologies and strategies that could help us define the right method for each student? I believe there is information that could be very helpful in building our bridges between various approaches and developing our methodology for the use of digital technology of many kinds in our teaching. They might even be helpful in the other aspects of our teaching! I suggest some systems here without evaluation or a discussion as to their usefulness.

### **Cognitive and Global perception**

I consulted with Dr. Eckhart Altenmüller, neurologist and brain researcher, and learned that the first categorization of learning takes place on one side of the brain before involving the other. Cognitive perception, which takes place on the left side, is a step-by-step process involving perceiving material as a series of details. Global perception on the right side, looks first at the larger picture, thereby often glossing over details. Our sensual perceptions, mainly visual and auditory are only a secondary physical complement, enabling us to complete the picture.

### **Teaching and learning is a process involving various phases**

David and Alice Kolb developed a theory of experiential learning that names 4 factors essential to the learning process.

Processing knowledge involves

- ◆ Concrete experience – “I make holes! You make lines.”
- ◆ Reflective observation – “What does that mean? What should I change?”
- ◆ Abstract hypothesis – “Will the picture will improve if I do this?”
- ◆ Active testing - “Is this right?”

Furthermore, good methodology should include the following aspects.

In order to learn, a student needs to

- ◆ be involved.
- ◆ explore.
- ◆ have things explained.
- ◆ apply their knowledge.
- ◆ evaluate the results.

However, as a teacher, I also need to create the systems that allow him to be involved, I need to encourage him to explore, be prepared to explain the vocal instrument to him, to allow him to apply his knowledge, and to evaluate the results on his own.

One of the significant conclusions is that learning is a process involving these phases all of which must be gone through for effective, long-term learning to take place.

### **Six learning strategies**

David Straker, a British researcher, lists 6 learning strategies

- Listeners
- Readers
- Writers
- Talkers
- Watchers
- Doers

We will hear more about this in a following presentation.

### **In conclusion, all three – and more approaches to teaching singing have their place**

Approaches

- Imagery
- Physiology
- Technology

The traditional imaging approach requires the student to imagine a different sound than the one he is making and often uses sensual images such as “feeling the tone”, doing something “as if...” But a student who says: “I can’t imagine how my sound could be different.”? needs a different strategy. A student and teacher, who love laryngeal sensation will likely agree on a physiological approach. Musically insecure students will do well practising with playback material, even if they sing classical music, and YouTube isn’t limited to finding crazy videos for Facebook.

### **Navigating by the stars or using GPS?**

Navigating by the stars got Columbus to Cuba, even if he thought he was in India. It got Franklin lost and frozen in the Canadian Arctic but it also took Cook to Australia. Our paper maps also got us to our holiday cottages, but the information from the GPS is definitely much more helpful on a long trip than my husband sleeping beside me with the map on his knees!

Let’s face it! We all use satellites for TV and mobile phones, we communicate via E-mail and SMS, jump on a plane and get our cash from an automatic machine. Our students do not know a world without computers. Why are most of us – myself included - still travelling through our teaching days “on foot” so to speak?

However just as GPS is no substitute for the stars, and TV doesn’t take the place of a live concert, and a telephone conversation plays a different role than a coffee or dinner date. “Smelling the roses” is an essential tool for teaching, but it does not substitute for the clarity and objectivity of digital voice analysis or knowledge of the singing instrument. In the same way, the computer can

serve many purposes, but it will never substitute for the teacher-student relationship. It will not put the soul in the voice or define beautiful or expressive singing any more than physiology or imaging will. It will not put us out of a job, but it will force us to redefine our approaches and our role, give us more tools and extend our choices.

### **Building walls or windmill?**

In 2009, Europe celebrated the 20<sup>th</sup> anniversary of the bloodless revolution that historically ended the Cold War. On that occasion, Hans-Dietrich Genscher, the foreign minister of Germany in 1989 said: *Wenn der Wind der Veränderung weht, kann man entweder eine Mauer errichten, oder man kann eine Windmühle bauen. Ich habe es vorgezogen zu versuchen eine Windmühle zu bauen.* «When the winds of change are blowing, one can either erect a wall or build a windmill. I preferred to try to build a windmill. »

And I prefer to try to build bridges! Let us do so together !

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