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BMPF7003: Module 1 Application of Learning in the Workplace.

Part 1.

Critically evaluate a range of theories and models that you have recently studied, explaining their relevance to your workplace practice and procedures and develop a strategy applying what you have learned to improve your practice.

Clare Ghigo

2115757

Analysing restorative methods and exploring the potential for better breath management for singers with Lordosis and/or Kyphosis.

My work as a professional classical singer has given me a thorough insight for the intense physical demands that preparation and performance put on the singers. This is even more challenging if they are dealing and performing with a hindering physical issue. I chose this topic due to a personal spinal issue that I encountered whilst preparing for a performance. I have been to several physiotherapists and medical professionals to try and find help when dealing with vocal production issues that arise but there seems to be a missing link. They all deal with specific localised issues but none show a complete knowledge of cause and effect of the whole-body function and chain reaction that these issues together are causing. After having taken numerous *Postural Restoration Institute* courses and *Anatomy Trains* fascial release (myofascial) trainings, together with my experience in yoga and my 200- hour yoga teacher training, my aim and research is to find common ground and create a series of stretches and postures that can aid the singer to release the tension and to get through a phrase more efficiently.

Initially, I would like to dwell on the common issues such as neck, shoulder, and back pain, mostly classified as Lordosis and/or Kyphosis. Kyphosis and Lordosis are physical musculoskeletal adaptations that the body create to function more efficiently. Lumbar lordosis is when the lower part of the spine curves and arches the back thus restricting the diaphragm and this affects the inhalation muscles. Kyphosis is when the chest is sunken and the upper back curves, inhibiting chest muscles from breathing and functioning freely (Calais-Germain, 2016, p. 58)

My strategy will focus on these two main features and on other issues such as arm pain, headaches or hip pain that might occur. Therefore, I will mention them without going into too much detail for the sake of the length of the essay.

The following voice-related concepts theories have been acquired from research websites such as: - PubMed, *Postural Restoration Institute*, ResearchGate, and *Anatomy Trains*.

These theories and models help me evaluate the importance of exercises in order to rehabilitate and re obtain postural stability in singing in order to achieve an efficient way to manage breath. In the popular singing technique literature such as Richard Miller (Miller, 1986), Janice Chapman's (Chapman, 2017) and Ruth Hennessey's lectures (Hennessey, 2020) all emphasise that proper alignment is of utmost importance for singing due to its correlation with the breath.

However, what happens when spinal issues such as Kyphosis and Lordosis interfere with the mechanics of the low intercostal breath that is needed in the classical voice?

When dealing with both Kyphosis and Lordosis one needs to comprehend the crucial impact that these two physical adaptations leave on the whole body but most importantly for a singer, on the voice. This evaluation is helping me to prove the relevance of an alignment awareness and how to maintain optimal function in achieving a full spectrum of resonance. An optimal alignment is of utmost importance for the singer (classical singer) due to the influence it has on the torso and diaphragmatic region, and which impacts the flow of the breath (Acker, 1987; Nair, 2007). Owing to the flexibility and the ever-changing body, awareness of maladaptive behaviour is first step to aid vocal freedom (Price et al., 2014). As from experience and practice, when the singer's body is compromised due to a variety of factors, such as stress, sedentary lifestyle, virtual meetings, or an injury, the body contorts to lessen the impact on the affected area and therefore by time they form and become new habits (Cardoso et al., 2019). Other observations are that both of these inhibited postures create the inability to connect to the lower region (low abdomen and feet) efficiently and optimally. In (Chapman, 2017, p. 32), the author suggests that a singer needs to be balanced both in the upper and lower part of the body. By this she means that if the body is sloughing forward the hips are thrust in a position that inhibits the movement of the thorax. As a result, the low diaphragmatic breath locks and cannot function freely. Similarly, if the body is over upright and tight in the lower (back) lumbar region, the pelvis loses the girdle like position and the breath-thorax connection becomes compromised (Cardoso et al., 2019; Cardoso, Meneses, Lumini-Oliveira, & Pestana, 2021; Cuccia et al., 2008).

Both of these spinal imbalances put a strain on the pelvis inhibiting it from its main regulatory (Jordaan, 2007) function. The role of the pelvis is mainly to transfer the weight from the upper part of the body to the low part and vice versa (McCarther, 2014). The pelvis is stabilised by a number of muscles, which include the pelvic floor, which supports vital organs and is the base for the whole spine which is attached at the back part of the sacrum. Due to the interconnection with the spine, the pelvic floor as the foundational stabiliser of the laryngeal mechanism (Nair, 2007), is responsible for the breath. This is because the larynx and the surrounding cartilages are intrinsically attached and balanced on top of a whole mechanism that optimally functions if the pelvis, thorax, neck and head are in practical alignment (Malde, et al., 2020, p. 30).

Furthermore, Ron Hruska (2021, p. 26) in his *Postural Restoration Institute*, states that without a balanced pelvis, the voice will not function optimally due to the increase in pressure on the spinal column which restricts both the thorax and the diaphragm, resulting in a restricted and tense larynx.

Even more so, the spinal flexion and torsion may inhibit the singer from being able to fully open the mouth (Piekartz, 2007). This is a very important aspect of singing and this inability of aperture is usually compensated by putting pressure on the neck, neck accessory muscles and jaw joints (Calais-Germain, 2016, p. 612). This is because due to the inhibiting gravitational pull the spine Lordosis or Kyphosis create, the body feels the need to form a base and a ground for the neck to function (Cardoso, Meneses, Lumini-Oliveira, Pestana, et al., 2021).

One might argue how a teacher can understand the percentage of the compromised body. However, a teacher can easily understand that the voice production is constricted because all of these physical inhibitions that result in a distorted resonance. The main role of the singer is to project and create music through sound waves. Spinal issues such as cervical kyphosis create a negative impact on the back of the neck, thus making it shorter and protruding forward. This puts the back of the throat in flexion and therefore it shortens the oral resonating chamber (Johnson & Skinner, 2009). Having studied and finding their relevance into practice I agree that physical imbalances such as Kyphosis and Lordosis, inhibit the full production and the full range of resonance. Therefore, this can be a vital indication for a teacher to identify some of issues that hinder the full sound in singing. Ron Hruska's lectures establish that in these circumstances, the full resonance spectrum suffers and disorders such as Hyper nasality or Hypo nasality occur (Hruska, 2021, p. 39).

Furthermore, through my observation and teaching experience, singers with Kyphosis or Lordosis tend to have the inability to fully breathe through the nose without tensing their sternocleidomastoid and jaw/ neck muscles. This results in a numerous number of issues with the management of breath flow and more often than not the inability to complete a full singing phrase (Armstrong et al., 2008).

The traditional way of inhaling air is through the nose; however, this might not be the right solution for singers with neck impingements. Herbert Caesari (Herbert-Caesari, 1968), clearly explains why solely nose breathing is inefficient for a singer. Although he mentions this in regard to singing fast passages, this also shows that the singer should breathe in a more efficient and convenient momentarily matter even if this means to mouth breathe. (Meyer, 2009) Even more so, traditional singing literature such as Richard Miller (1986) discusses the mechanics of the breath, abdominal wall, and the rib cage, yet it seems to leave the issue of nose/ mouth breathing, neck and the neck accessory muscles issues out of this flow system.

More recent literature such as Nair (Nair, 2007) and McKinney (McKinney, 1994) recognise the importance of a released neck to aid a proper laryngeal and breath function. From personal experience as a student, most singing teachers know that neck tension is not a good sign.

However, they tend to shy away from such anatomical issues due to their lack of medical expertise. This issue is usually a more complex matter and by indicating to release the jaw, or to let go of any neck tensions is therefore not an efficient correction for any singer. This usually leaves the student perplexed and the issue never gets fully addressed via vocal exercises. According to (Hruska, 2021; Piekartz, 2007) any neck tension and maladaptive and compensational use of the neck is the inability to rotate from the torso which results into a lack of abdominal breath support.

From my observation and practice, I found a lack of literature which suggests exercises and solutions for a singer with such issues, especially in how to bypass neck muscle tensions and how to build a stronger breath control.

After understanding the relevance of such theories another learning outcome is that of using *Postural Restoration Institute* methods and yoga poses to strengthen the singer's muscles and re-establish an efficient alignment. These concepts have proven to be of genuine help in my work practice and they have given positive results. Therefore, I intend to develop complimenting exercises such as simple stretches that together with some singing exercises, can aid singers with both Lordosis and Kyphosis strains release musculoskeletal tensions and produce a better voice production.

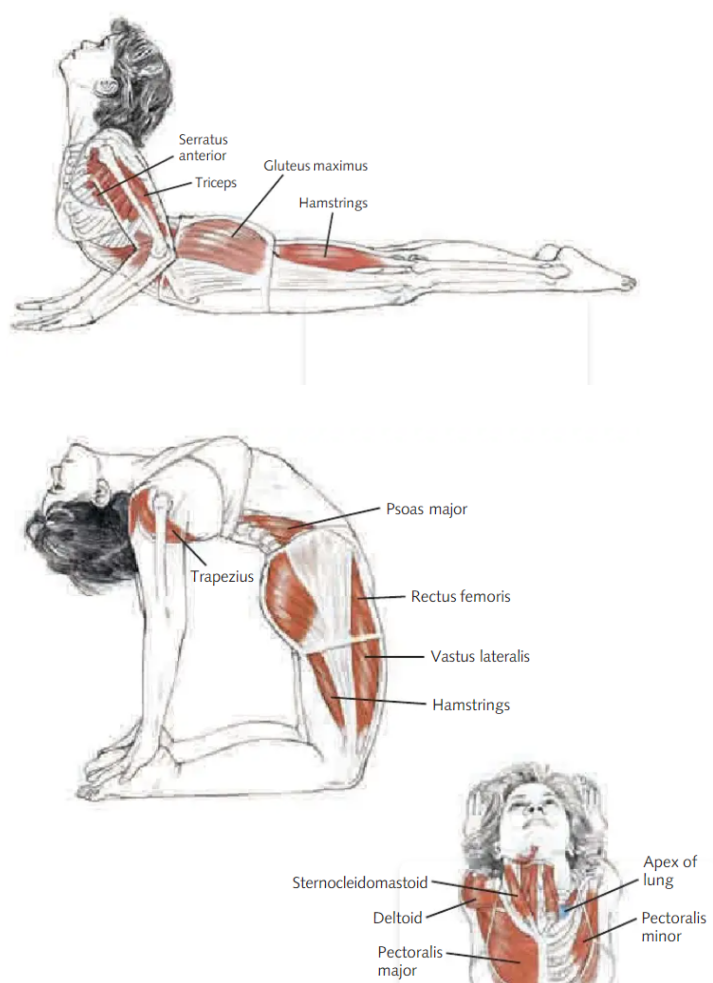
Some common stretches that are usually suggested by physiotherapists and some knowledgeable singing teachers are side stretches and neck rolling from one side to the other (Amiri-Khorasani & Kellis, 2015). Garyth Nair (2007, p. 90) suggests side stretches to create awareness of neck and its influence on the laryngeal mechanisms. He continues that in some cases, whilst doing these mild stretches, some singers can truly feel the optimal breath connection and an awareness of an efficient voice production. These mild stretches can momentarily ease tension but they can be of detriment due to the complexity of the spinal issue (Amiri-Khorasani & Kellis, 2015; Wilson Arboleda & Frederick, 2008).

I noticed that the common medical treatments prescribed for the pain that accompany both Lordosis and Kyphosis, are the following: anti-inflammatory medication, physiotherapy, weight management programmes and vitamins to strengthen the body's system (Physioplus, 2022).

Although I am not questioning these medical remedies because I am sure that they are somewhat effective yet they are very generic and clearly do not cater for the singers' specific needs. Being into this situation myself, these remedies are clearly not efficient for a working performer.

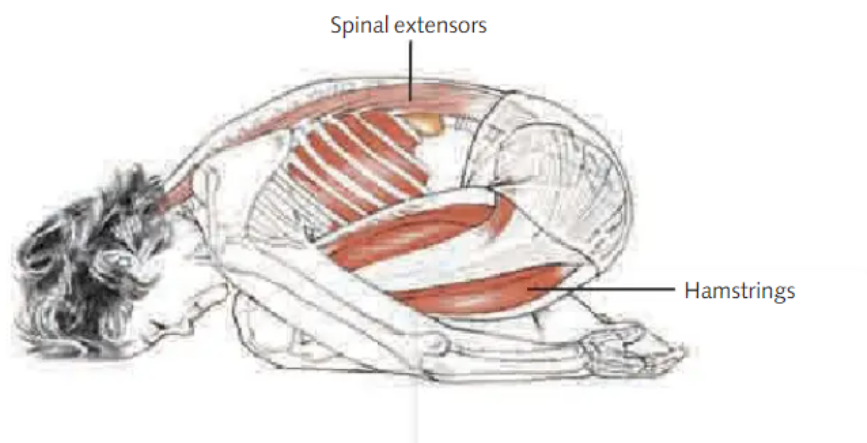
Having also researched alternative therapies, I found out that according to yoga traditional poses, each move needs to be counterbalanced by another asana (pose) and therefore, some

of the stances that counterbalance the drooping neck syndrome (cervical kyphosis) are chest opener poses (Carman, 2004; Kuhn, 2006; Lloyd et al., 2017). These are poses that flex the back and open the rib cage to deactivate the neck accessory muscles. Such heart opening poses are cobra [figure1 (Kaminoff, 2021, p. 176)], and camel [figure 2 (Kaminoff, 2021, p. 122)].

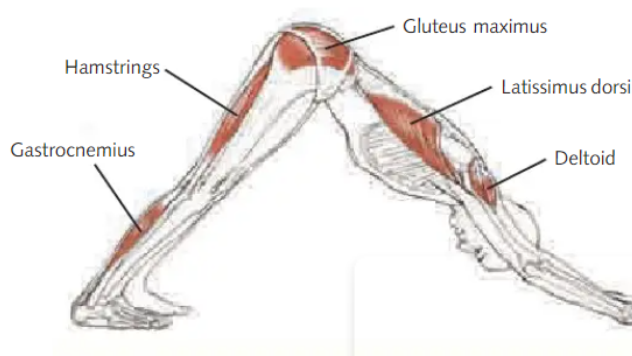


In his anatomy dictionary, Leslie Kaminoff (Kaminoff, 2021) suggests a variety of poses, which are amongst the well-known poses and easy to execute. This is because they target more than just the crucial muscles but the whole foundational system. Singing in either the cobra or the camel pose can be quite challenging and unproductive for anyone let alone someone with a neck issue. However, one can try to sing in a neutral standing position after trying these tension release exercises and notice if there was any difference in the sound/breath management.

Poses that counter balance the Lumbar Lordosis are movements that elongates and strengthen the lower back. Such moves are the child's pose (Kaminoff, 2021, p. 122) [figure 3] and the downward facing dog (Kaminoff, 2021, p. 175) [figure 4] variations.



shvana = dog



Similarly, like in the cervical Kyphosis exercises, these are uncomfortable postures to sing in and therefore one should try to sing after the execution of the postures. In my experience most students who can obtain a variation of any of these poses feel a sense of immediate freedom in their inhalation and in their singing.

Apart from these generalised yoga postures, the exercises taken from the *Postural Restoration Institute* are slightly more delicate than the once chosen from the yoga traditions. This is because these restorative postures deal with the instability or malfunction of the spinal rotation (Hruska, 2021). Therefore, these following exercises that aim in stabilising the abdominal wall need to be done with assistance. Such exercises need assistance due to the instability of the spine. The practitioner needs to guide the student towards the correct posture. Such postures are usually done seated or lying down. Some examples (Hruska, 2021, p. 93) are shown in the pictures below.

Postural Restoration Institute® Treatment Approach

Restore pelvic position and muscular balance



Restore apical chest wall expansion



Restore diaphragmatic breathing



Additionally, I feel the need to connect both the yoga and the *Postural Restoration Institute* exercises together to be more directed towards the singer's needs. Such exercises can be found in the appendix.

From my own teaching experience, I noticed that after the students executed the exercises that I had designed for them they felt more vocal freedom. In doing these postures plus the vocal exercises (such as simple scales) they also felt more at ease in the pose than if they were solely executing the yoga postures. This is because the postures that I gathered and modified were specific for singing purposes and not only for a generalised release. Furthermore, the students were aware of their own tension and the pose allowed them to fully connect with the breath without the need to tense extra muscles.

In conclusion I have understood the importance of the way forward that of including both the yoga postures, the *Postural Restoration Institute* exercises into the singing practice to aid and strengthen the breath flow and management. This method is efficient for any singer because it aids their musculoskeletal strength in a long-term period. Although the stamina for executing these exercises might take a while to establish, I believe that ultimately it is highly beneficial for one and all but most importantly for classical singers.

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Part 2.

A Reflective Review Comprising of Two Parts.

- a) Reflect on your recent learning experience, and the value of learning you acquired. Assess your current competencies and identify future development needs in the context of the work situation.
- b) Devise a detailed personal development plan which incorporates development objectives, activities to be undertaken, methods, resources review periods and timescales

In the research that I have gathered regarding the importance of correcting the spinal alignment to avoid vocal complications, I found extensive anatomical literature such as (Cardoso, Meneses, Lumini-Oliveira, Pestana, et al., 2021; Watson. 2009) regarding the alignment musicians and singers need to adopt to function optimally. A. Watson (Watson, 2004) gives a detailed description and discusses the impact sedentary lifestyle leaves on the spinal alignment for all musicians especially those who have to be in a particular position to play their instrument. Similarly, singers who tend to have a more sedentary lifestyles might find a decline in their vocal freedom due to forming new spinal habits.

Furthermore Jenny Iwarsson's (Iwarsson 2001) asserts that sitting for a prolonged period of time especially without postural awareness can result in lack of strength in the abdomen which leads to issues such as Kyphosis and Lordosis. In relation to this study, I have experienced a growing number of students suffering from back pain, neck tension and jaw stiffness some of whom also reported a decline in their singing confidence and an increase in anxiety. Although I will not be expanding on the influence alignment has on the central nervous system, the restricted (seated) position is highly linked to a sedentary lifestyle and a long period spent in a compromised position for example that of working from a computer (Armstrong et al., 2008).

Although the studies conducting these researches are extremely intricate, I found that the suggested remedies such as physio therapy stretches and occupational therapy remedies are generic and usually more focused towards a sports related injury or a localised tension. For example the exercises that (Wilson Arboleda & Frederick, 2008) specify are ideal for singers with both Lordosis and/or Kyphosis but the suggested exercises tend to be done without the active mechanism of singing and almost without the vocal production in mind. This does not

mean the study is incorrect but due to the body's complexity vocal production rehabilitation is not so straight forward. Fascial release methods such as Myers's (2009) can be effective because they deal with the surrounding fascia which eases the spinal impact but what happens to the fascia in action especially when the singer is singing? Is the myofascial release method efficient even for singers who have breath management issues due to Kyphosis and Lordosis?

In my teaching experience I have learnt that applying gentle pressure to trigger spots such as the lumbar region or shoulder area aids the student to feel more breath connection. This is because the student feels guided in the breath's expansion and feels less overwhelmed with the ongoing issues. Although this method is momentarily effective, it is not an efficient way for the singer because they cannot replicate it on their own. Similarly, the effective methods of Hruska (2020) are transformative exercises for the singer, but due to their complexity, the singer needs to be supervised so that they can achieve the best results.

Therefore I feel that, although these methods are extremely effective, one can only see the result in the long term which might make the student feel defeated. Having dealt with issues myself and after finding no specific therapy which aids directly to singing, I have taken a number of multi-disciplinary courses and attended a variety of medical lectures to find a specific solution for singers. Besides being both a yoga practitioner and a yoga student, has urged me on to help the students from a holistic body/ mind approach. As a teacher, I have understood the need to tackle these simple alignment issues before they start to affect the body and the voice negatively.

This is because it is imperative for a student to know who to refer to when dealing with physical/vocal impeding issues. The way forward for me is the need to explore a variety of postures that singing students are able to conduct with their teacher and replicate it on their own and still achieve an efficient breath management.

The difficulty that I came across was the need to simplify and modify exercises taken from Postural Restoration Institute and Yoga done together with singing exercises. This is because most exercises were conducted in awkward and not upright positions and therefore the singer could not replicate the effect in a normal singing position. Most Postural Restoration Institute exercises that can be done upright seem to be those obtained by advanced students. Therefore, there is a need to merge these poses to be carried out in a more upright and thus more practical to the singer's needs.

In conclusion, obtaining postural efficiency is superlative to any singer and studies such as (Cardoso, Meneses, Lumini-Oliveira, Pestana, et al., 2021; Watson. 2009) show the change in vocal production according to postural efficiency.

Developing my future plan.

Part: B

Personal Development Plan	
Why am I doing this course and how I intend to develop these objectives?	I am doing this course because I am aware that most singers dealing with Kyphosis/ Lordosis can not tackle their issue via a specific singing method. It is a personal benefit to me because I have dealt with these issues myself and I know how important it is for singers with spinal issues to feel that there is a specific method which includes the voice in their rehabilitation approach.
What are the activities and methods to be undertaken?	The method that I would like to develop is that of applying specific exercises to address singing with Kyphosis and /or Lordosis. I aim to measure the vocal freedom and breath management achieved before and after doing these exercises. Each exercise needs to have a variety of modifications in order to specifically cater for the singer's needs.
How can the result be measured and what is the long-term effect?	The difficulty in this task is making sure the students practise in the pose so as to monitor improvement, before singing in an upright position. Regarding the long-term effect, the practice is still being developed and therefore it is hard to foresee. This is also because it depends entirely on the severity of the issue and the perseverance of the student.
What other pedagogical methods that can be acquired?	I need to make sure that the therapy I am delivering is understood well by the students. I would like to further my research into other

	holistic methods such as Feldenkreis, Biomechanics and Vocal release massage so as to have a more complete understanding.
Planned review period.	The vocal/ breath management improvement should be felt immediately and if the commitment to the exercises is kept regularly, the vocal stamina should improve drastically within three months. I aim to monitor the student's development and breath management before and after the exercises. The measurement used will be the ability to control a specific singing phrase.

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Appendix:

Breath efficiency for singers with Cervical Kyphosis.

Singers with the hanging neck issue tend to feel that they never have enough breath to sustain a phrase. This means that the air is getting stuck either in their neck muscles or in the diaphragm area.

- Lie on a mat with the knees bent, shoulder width apart, whilst putting a medium inflated Pilates ball between both knees. It is important to use a soft ball that serves as a gentle aid not resistance.

- Make sure the singer is fully on the mat with no neck or abdomen clenching.
- Tilt the hip slightly as if to aid the bum a few centimetres off the ground without arching the back. It is important to inhale and exhale without tensing the abdomen.
- Angle the neck slightly to one side and breathe in, then whilst staying in this position, activate the pelvic tilt and centre the neck at the end of each inhale.
- The singer will be able to check if the air is easier on one side more than the other.

Whilst applying this exercise on my students I was able to understand if it is the singer's Occipital Joint disfunction which is hindering their breath and thus resulting in cervical Kyphosis.

By doing the exercise with just breathing, then incorporating a sound, the singer will start to feel the breath connection, the back muscles working without the standing gravitational challenge.

Exercise to aid thoracic movement for students suffering with Lumbar Lordosis.

Singers with Thoracic Lordosis have the inability to feel the expansion in the back due to constricted muscles.

- Ask the singer to face a wall or a surface with their legs open, shoulder width apart.
 - Make sure they bend their knees and to constantly feel the ground with both their toes and heels.
 - Have them place their palms on the wall with the elbows bent and relaxed. With an inhalation ask them to tuck in their tail bone and round their back whilst not losing connection to the ground and without tensing their neck and shoulders muscles.
 - After completing this exercise, ask them to tuck their tailbone on either side of the body as if they are wagging their tailbone. In my experience this exercise makes the singer aware of their back muscles and aid them in achieving a freer sound.
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