

MINDFUL SINGING: EXPLORING MINDFULNESS
AND SELF-REGULATION IN CLASSICAL SINGING

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ABSTRACT

The harmonious partnership between the **mind and body** lies at the core of practice and performance for classical singers. **Mindfulness** (staying in the present moment) and **Self-regulation** (understanding and controlling one's own learning environment) are key concepts that when applied to the discipline of classical singing, could help to enhance the growth of efficient learning skills and healthy vocal development. This paper gathers the philosophies and perspectives of respected researchers (including Jon Kabat-Zinn, Mihaly Csikszentmihalyi and K. Anders Ericsson), and organizes them into three separate stages: 1) **Mindfulness Stage One** – which involves *mindfulness meditation*, developing awareness and increased concentration by paying exclusive attention to the breath, 2) **Self-Regulation** – which centers on *deliberate practice*, the *experts'* approach to acquiring and developing a skill, acting as a bridge to 3) **Mindfulness Stage Two** – *FLOW*, the state in which the mind-body connection has been finely tuned to the point that the performance seems effortless and spontaneous.

Research data was acquired from classically trained singers through a comprehensive online survey, to determine if the concepts of Mindfulness and Self-regulation were being utilized in the training and performance of classical singers. Comparisons were made between the responses of student singers and professional singers. The intention was to look for commonalities and differences with regards to their training and performance practices as well as their perspectives on and experience with these key concepts.

Based on the survey results, the researcher concludes that the singer participants are familiar with and do apply some basic Mindfulness and Self-regulatory concepts and strategies to their practice of singing. The researcher believes that the singers could benefit from a deeper understanding of these concepts, leading to more consistent and focused training and

performance. Further research is needed that would require direct observation of the singers' implementation of these concepts into their regular practice routine. The information garnered through this dissertation sets up a foundation for promising future research projects, such as the development of smart-phone applications as tools for self-feedback and self-analysis, further exploring how Mindfulness and Self-regulation can be applied to classical singing.

To all dreamers, creators, educators and storytellers

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I also extend my thanks to the many singers who invested time and effort into completing my online survey. I am heartened by the enthusiastic response to my research. I look forward to sharing information and continuing the exploration of mindfulness and self-regulation with the singing community.

Finally, I wish to express my heart-felt thanks to my family. Your love and support give me the strength to push through challenging times, and to continue pursuing my love of singing on stage and in the academic arena. I am forever grateful.

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INTRODUCTION

Every generation has its own character and personality formed and influenced by the events and perspectives prevalent during that time period. With the rise of each new generation, there is a tendency for the previous older generations to have concerns about the differences and changes that the younger generation brings. Generation Z, is the latest group, covering people born between 1997 - 2012.¹ This generation has been greatly influenced by the increase in cultural diversity, and also subject to the clashing worldviews of today, which includes divisive politics, racial and gender inequality and worldwide violence. At the time of writing this paper, the world is deeply immersed in the COVID-19 pandemic, having lived under its cloud for most of the year 2020. What makes Generation Z particularly unique is that they are the first group of people to have never known a time without smart-phone technology. This generation is currently immersed in the school systems, and some have already been in college and university for a few years.²

Distractions abound with the prevalence of digital devices. These young minds are constantly bombarded with social media that insidiously raises their level of anxiety and self-consciousness. They are experiencing Tech/Screen overload, resulting from the enormous amount of time spent online. Researchers outline a number of concerns (negative traits) that characterize Generation Z:

- Poor skills in face to face interactions.
- Poor conflict-resolution skills
- Have a preference for shortcuts

¹ Michael Dimock, "Defining generations: Where Millennials End and Generation Z begins," *Pew Research Center*, January 17, 2019, <https://www.pewresearch.org/fact-tank/2019/01/17/where-millennials-end-and-generation-z-begins/>.

² Sarah Daughtrey, "Let's Start at the Very End: Teaching the Singers of Generation Z," *Journal of Singing* 77, no. 1 (September/October 2020): 25.

- Carelessness in communication and writing.
- Short attention spans and are easily distracted
- Less ability to concentrate and to complete tasks.
- Interested only in what is of immediate/personal relevance and use.
- Results-oriented rather than process-oriented.³

University students struggle with these characteristic traits on a daily basis, resulting in an increase of mental health problems. Doctor Catharine Munn, a psychiatrist at McMaster University, addresses crucial issues in an article entitled *Overwhelmed*, printed in the Toronto Star.⁴ She refers to data collected from a joint investigation by the Toronto Star and the Ryerson School of Journalism. Their survey acquired information from 15 universities and colleges across Canada, revealing a high demand for mental health services among young people today. An emphasis is placed on constant access to social media, which can lead to new pressures not faced by previous generations. Patricia Marra-Stapleton, the mental health leader for the Catholic District School board, is quoted stating “This generation of children and youth live in two universes...One is real life. They also live in a digital social world. What we see emerging is that kids as young as eight years old have an overdependence on social media and digital connectivity.”⁵

This lack of focus and increased levels of anxiety is evident not only with students, but also amongst a wide range of age groups and in varying fields of work. Although the youth of Generation Z may be more impressionable and therefore more susceptible to the effects of technology, there are arguably a percentage of the older generations that have also succumbed to and developed a reliance on technology.

³ Daughtrey, *Let's Start at the Very End*, 27.

⁴ Catharine Munn, “Overwhelmed,” *Toronto Star*, May 29, 2017, A1, A8.

⁵ *Ibid*, A1, A8.

A new “Mindfulness” movement is gaining popularity, with a number of books and magazine being published. Mindfulness is about bringing one’s mind back to the present moment. It’s about purposefully paying attention without judgement.⁶ A distracted mind is a mind that lacks organization of thought.

Self-regulation or self-regulated learning is a growing field in educational psychology. “Self-regulation theory...focuses attention on *how* students personally activate, alter, and sustain their learning practices in specific contexts...”⁷ Self-regulation abilities include goal-setting, self-monitoring, self-instruction, and self-reinforcement. It refers to one’s ability to understand and to control one’s own learning environment. This theory could serve as a counter-acting solution to a distracted mind. Self-regulation strategies could help students (and everyone else) in focusing their minds, overcoming the anxiety that results from unorganized and undisciplined thoughts.

This dissertation focuses on mindfulness and self-regulation in classical singing. Self-regulation abilities and strategies could encourage the development of mindfulness in singers of every level, particularly university voice students, possibly leading to a more effective and healthy learning experience. Though singers receive crucial lessons and guidance from their teachers, the student singer needs to learn how to work with her own voice, by herself, during the days between lessons. The researcher seeks to determine if self-regulation skills and strategies can play a significant role in the improvement of the student’s vocal skill. With the ability to self-regulate and to take responsibility/accountability for her own practice, the student’s self-

⁶ Jon Kabat-Zinn, *Wherever You Go, There You Are: Mindfulness Meditation in Everyday Life* (New York: MJF Books, 1994), Hyperion E-Books, Adobe Digital Edition, 2009, 88.

⁷ Barry J. Zimmerman. “Becoming a Self-Regulated Learner: Which Are the Key Subprocesses?” *Contemporary Educational Psychology*, vol. 11 (1986): 307-313.

confidence will also improve and can build towards a foundation for a realistic and grounded perspective. If a student feels more in control of the development of her abilities, then perhaps she will feel more motivated to pursue her craft. She will be more prepared for her voice lessons, ready and eager to take the next step with her teacher's guidance.

Listed below are the objectives of this research project:

- 1) To acquire information from professional singers and voice students, exploring the concepts/methods of mindfulness and self-regulation that may already be in use. If so, is there a resulting positive effect in vocal training/development?
- 2) To collate existing strategies and concepts, developed by singers and vocal pedagogues that potentially encourage mindfulness and self-regulation.
- 3) To attempt to build on these existing strategies, either through enhancing those strategies or developing and suggesting new tactics, that could encourage mindfulness in singing, growth of efficient learning skills, and contribute to an overall healthier mind and voice.
- 4) To attempt to bridge the gap between how students practice, and how professionals practice, with the intention of aiding students to transition into healthier practices that are more consistently demonstrated by professionals. The notion that professionals are more efficient and healthier in how they practice, is supported by published research.⁸

It is essential that the concepts of mindfulness and self-regulation are clearly defined, and that connections are drawn between these processes to establish how they work together to

⁸ Barry, Nancy H. Barry and Susan Hallam. "Practice." In *The Science and Psychology of Music Performance: Creative Strategies for Teaching and Learning*, ed. Richard Parncutt, Gary E. McPherson. (New York: Oxford University Press, 2002), 151-165.

increase efficiency in learning and performance. The researcher has constructed the following basic flow chart to help clarify the links between these key concepts. Mindfulness has been divided into two separate stages, Mindfulness Stage One and Mindfulness Stage Two, connected by the bridge of Self-Regulation.

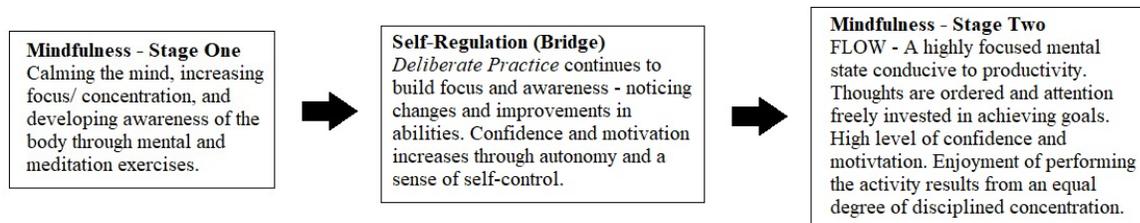


Figure 1: Basic Flow Chart – The Two Stages of Mindfulness and Self-Regulation

LITERATURE REVIEW

The Two Stages of Mindfulness

Stage One – *Calming the Mind and Developing Awareness*

Habitual Unawareness

I found that awareness, the simple quality of attention that we can pay to events, people, and things, works like a flashlight. It illuminates things that we were “in the dark about,” and shows us clearly things that we already almost knew. Yet we seldom really allow our awareness free rein to function.⁹

Paying attention seems like a straightforward task. Most people would assume that they are already doing this as they go about their daily duties. Human beings, however, have a tendency to become reliant on routines. Following a routine is comfortable. Knowing what to expect, and having those expectations fulfilled generates a feeling of safety. Feeling safe, a person gains security and confidence, and will continue to invest in that routine because it lies within the realm of what is “known”. Routines are created by people, based on recurring patterns that suit their liking. They are a necessity yet, people often commit to their routines, not fully understanding or knowing why they subscribe to them. They act and react automatically, functioning through *habitual unawareness*.

A mind that is unaware is clouded with random thoughts – dwelling on moments of the past or drifting to future possibilities. If people are not paying attention to the present moment or the present action, they are functioning through automaticity, completing the actions of a routine, and expecting the outcomes that result from following that routine. Inevitably there are times

⁹ Barry Green and Timothy Gallwey, *The Inner Game of Music* (New York: Doubleday, 1986), 37.

when these expectations are not fulfilled, upsetting the desired normal pattern. The unaware mind is taken by surprise, because it is not paying attention. Unacknowledged fears and insecurities begin to surface and can eventually dominate both thought and action. If a person continuously succumbs to his emotions and quick reactions, that response eventually becomes a habit in itself. This perpetuates the cycle of fear and insecurity, and can obscure the actual problem – a lack of *awareness*.

Mindfulness Meditation

Awareness is not the same as thought. It lies beyond thinking, although it makes use of thinking, honouring its value and its power. Awareness is more like a vessel which can hold and contain our thinking, helping us to see and know our thoughts as thoughts rather than getting caught up in them as reality.¹⁰ (Kabat-Zinn 2009, 82)

Awareness analyzes and organizes thoughts, tempering reactionary behaviour. It allows a person to be more fully present, informed and able to act according to his/her circumstances. Jon Kabat-Zinn – professor, scientist, writer and meditation teacher - is known for his focused work on the cultivation of awareness through the practice of *Mindfulness*. He founded and directed the Center for Mindfulness in Medicine, Health Care, and Society. He also developed and directed its world-renowned Stress Reduction Clinic.¹¹ According to Kabat-Zinn:

Mindfulness means paying attention in a particular way: on purpose, in the present moment, and non-judgementally. This kind of attention nurtures greater awareness, clarity, and acceptance of present – moment reality. It wakes us up to the fact that our lives unfold only in moments. If we are not fully present for many of those moments, we may not only miss what is most valuable in our lives but also fail to realize the richness and the depth of our possibilities for growth and transformation.¹²

¹⁰ Kabat-Zinn, *Wherever You Go*, 82.

¹¹ *Ibid.*, 218.

¹² *Ibid.*, 17.

It is a practical and systematic process of self-observation and self-inquiry, which can guide *Mindful action*, and nurture the growth of potential in a realistic and personal way. Kabat-Zinn highlights *Mindfulness Meditation* as a core exercise in cultivating awareness – the ability to be in the present moment.¹³

There are many forms of meditation. *Transcendental Meditation* is perhaps the most well-known and more often practiced and researched form of meditation. The practitioner focuses on a single *mantra* – a word or phrase repeated silently – calming the mind and the body, and inducing a meditative state. *Mindfulness Meditation* differs in that it trains practitioners to attend to a wide range of changing objects of attention while maintaining moment-to-moment awareness. The approach of mindfulness meditation has an immediate applicability to a variety of present moment experiences, and is therefore more accessible.¹⁴

A core exercise of mindfulness meditation is to pay attention to the simple act of *breathing*. Kabat-Zinn suggests:

Staying with one full in breath as it comes in, one full out breath as it goes out, keeping your mind open and free for just this moment, just this breath. Abandon all ideas of getting somewhere or having anything happen. Just keep returning to the breath when the mind wanders, stringing moments of mindfulness together, breath by breath.” (Kabat-Zinn 2009, 27)

This mindfulness exercise seems simple, yet it is not easy. The human mind has a tenacious tendency to become distracted. The mind likes to wander, over-think, judge and worry. It is

¹³ Kabat-Zinn, *Wherever You Go*, 18-20.

¹⁴ Jon Kabat-Zinn et al. *Effectiveness of a Meditation-Based Stress Reduction Program in the Treatment of Anxiety Disorders*. (Presented at the annual meeting of the Society of Behavioural Medicine, Chicago, April 18-21, 1990, and at the First International Congress on Behavioural Medicine, Uppsala, Sweden, June 27-July 1, 1990), 1-2.

expected that the mind will drift. The goal is to bring the focus back to the feeling of breath moving in and out of the body.

Acknowledging Distractions

Emotions and Reactions

Human beings crave progress. There is a constant desire to move forward and to improve. Impatience is the natural result, when a person begins to want and expect progress at a faster rate. Mindfulness meditation encourages the abandonment of those thoughts and desires, which can distract one from focusing on the present. One develops patience and cultivates awareness while focusing on the *unfolding of each moment*, whether it is with the inhalation or exhalation of each breath, or through paying attention to the sequential course of events that take place throughout the day. It means being present with each moment, and allowing things to happen without forcing them, or rejecting events that do not fit one's expectations. Under the thin layer of impatience lies anger ready to rage, complain and to blame when expectations are not met. Once anger takes over, then any sort of progress is halted. Countering anger requires *Mindful observation*:

Observe your reactions in situations that annoy you or make you angry. Notice how even speaking of something "making" you angry surrenders your powers to others. Just live with these feelings as you observe them, let them be, let yourself digest and understand, instead of reacting quickly.¹⁵

The first step is to notice when emotions begin to rise, and to acknowledge the desire to react to that emotion. The observation of emotional thoughts – whether angry, worried, depressed, etc. – allows a person to keep those emotions at a distance, and creates the

¹⁵ Kabat-Zinn, *Wherever You Go*, 190.

opportunity to reflect clearly without being overwhelmed by feelings. With a clearer mind, more appropriate solutions can be discovered, resulting in *mindful action*, and forward progress.

Judgement

Judgemental thoughts are pervasive. When one engages in mindfulness meditation, it does not take long to discover how quickly and constantly the mind compares experiences and evaluates them. This type of thinking determines “good” and “bad” standards, and creates expectations and biases according to those standards. Judgement of others, circumstances and self weighs the mind down with thoughts, and can paralyze and trap a person. Mindfulness meditation can free a person from these constraints by being aware of the tendency to judge, and accepting it as part of human nature:

When judgement occurs, don't try to stop or ignore it. Simply witness it and recognize it without condemning it or pursuing it. Meditation allows direct contact with the experience itself – an intake or release of breath, a sensation or feeling, a sound, an impulse, a thought, a perception, a judgement. Remain attentive to the possibility of getting caught up in judging the judging itself!¹⁶

The Ego or “Selfing”

Through the practice of mindfulness meditation, it becomes apparent that human thought is rooted in *Selfing*¹⁷ – a term coined by Larry Rosenberg, founding teacher of the Cambridge Insight Meditation Center.¹⁸ It refers to the human tendency to make everything and every situation about oneself, operating from a limited point of view - *I, me, mine*, etc. It has become such a norm in current culture and society that it often goes by completely unnoticed. Even the

¹⁶ Kabat-Zinn, *Wherever You Go*, 55.

¹⁷ *Ibid.*, 183-185.

¹⁸ “Larry Rosenberg Profile,” Insight Meditation Society, accessed August 6, 2020, <https://www.dharma.org/teacher/larry-rosenberg/>.

development of technology reflects people's self-preoccupation, with the innovation of camera phones that allow for users to take pictures of themselves, known as *selfies*. When the cares of the ego take control, a person becomes preoccupied with constructing an unrealistic image of herself. This image is moulded and influenced by the desires and expectations of that person, which are usually idealistic, and difficult to live up to:

The "I" feels good when supported by outside forces and circumstance, and feels bad when it runs into criticism, difficulties, obstacles and defeat. When the ego takes center stage, balance is lost. Here perhaps lies a major explanation for diminished self-esteem in many people. We aren't familiar with this constructed aspect of our identity process. This makes it easy for us to lose our balance and feel vulnerable and inconsequential when we are not propped up and reinforced in our need for approval or for feeling important. We are likely to continually seek interior stability through outside rewards, through material possessions, and from others who love us.¹⁹

Mindfulness meditation can help a person to recognize this process of *selfing*. In doing so, people can prevent the human ego from dominating their thoughts and clouding their perspective. With clarity, and a calmer mind, people can experience *being*, and can begin to accept who they really are in their present state.²⁰

Awareness and Acceptance of the Present State

According to Kabat-Zinn, Mindful meditation is the only *intentional systematic human activity* which is not about trying to improve or to get ahead. It encourages the release of those expectations and pressures:

When we let go of wanting something else to happen in this moment, we are taking a profound step toward being able to encounter what is here now. If we hope to go anywhere or develop ourselves in any way, we can only step from where we are standing. If we don't really know where we are standing – a knowing that comes directly from the

¹⁹ Kabat-Zinn, *Wherever You Go*, 184.

²⁰ *Ibid.*, 184 – 186.

cultivation of mindfulness – we may only go in circles, for all our efforts and expectations. So, in meditation practice, the best way to get somewhere is to let go of trying to get anywhere at all.²¹

This concept may come across as paradoxical, yet it is logical. If a person is able to let go of impatient desires, for example, the need to be at a certain level of expertise in a task, then that person can begin to face the reality of his present abilities and resources. It then becomes possible to take mindfully planned steps that cater to that person’s capabilities, allowing for realistic progress.

Concentration

While cultivating awareness through mindfulness practice, one is ultimately strengthening the ability to *concentrate* (or to pay attention) – “the capacity of the mind to sustain an unwavering attention on one object of observation.”²² In mindfulness meditation, that concentration is developed through vigilant observation of the breath. Worried and judgemental thoughts will unavoidably creep in, yet over time, and with extended practice, the mind becomes better at staying on the breath, and at noticing the slightest impulse of distraction. One becomes more adept at resisting the pull of distractions, or can quickly refocus the mind on the breath after a brief distraction. This improved ability to concentrate can then be applied to other activities. A person with a calm, focused mind can more accurately observe and reflect on present tasks, and will have a better chance of discovering efficient ways of achieving those tasks.

²¹ Kabat-Zinn, *Wherever You Go*, 24.

²² *Ibid.*, 68.

“Non-Doing” – Effortless Activity

Kabat-Zinn claims that in sitting down to meditate, one is engaging in *non-doing*. It is important to clarify that non-doing is not synonymous with “doing nothing” – being passive and indolent. Non-doing involves consciousness and intention. He further speculates that there are two kinds of non-doing – one in which a person is consciously meditating, yet not doing any outward physical work or task; the other is in the performance of an outward physical task, accomplished so efficiently, that it comes across as *effortless activity*.

Non-doing can arise within action as well as in stillness. The inward stillness of the doer merges with the outward activity to such an extent that the action does itself. Effortless activity. Nothing is forced. There is no exertion of the will... Non-doing is a cornerstone of mastery in any realm of activity.²³

Some of the highest levels of non-doing can be witnessed in the fields of sports and the performing arts, though it can occur in every area of human activity. This state of effortlessness has become its own area of study, and has come to be known as *flow*.²⁴

Summary

Kabat-Zinn’s approach to developing awareness through mindfulness meditation is accessible and applicable to a variety of activities and to general daily living. Figure 2 (at the end of this section), a comprehensive visual flow chart of Kabat Zinn’s process, was created with the intention of providing a visual aid that breaks down and clarifies his key points. A person often begins in a state of (1) *Habitual unawareness* – mindlessly following a comfortable routine, yet vulnerable to random and disorganized thoughts which can cause dissatisfaction and frustration.

²³ Kabat-Zinn, *Wherever You Go*, 44.

²⁴ *Ibid.*, 40.

(2) *Mindfulness Meditation* – calms the mind by encouraging the person to focus on one thing only, the inhalation and exhalation of breath. The person learns to recognize and (3) *acknowledge the distractions* that naturally arise. She does not succumb to them, and (4) *brings the focus of the mind back to breathing*. Through constant and consistent practice, (5) *a person becomes more aware of and accepting of their present state*, with the addition of *improved concentration*. He touches on the concept of non-doing (i.e. effortless activity), highlighting it as a result of mindfulness meditation. This concept is further explored through the research of Mihaly Csikszentmihalyi, who defines it as *flow*. In the chart, *flow* is included as the second stage of Mindfulness. It must be noted that step (6) *Self-Regulation*, theoretically thought of as the bridge between the Two stages of Mindfulness will be covered in a later section of this paper. The stages of Mindfulness must first be clearly defined.

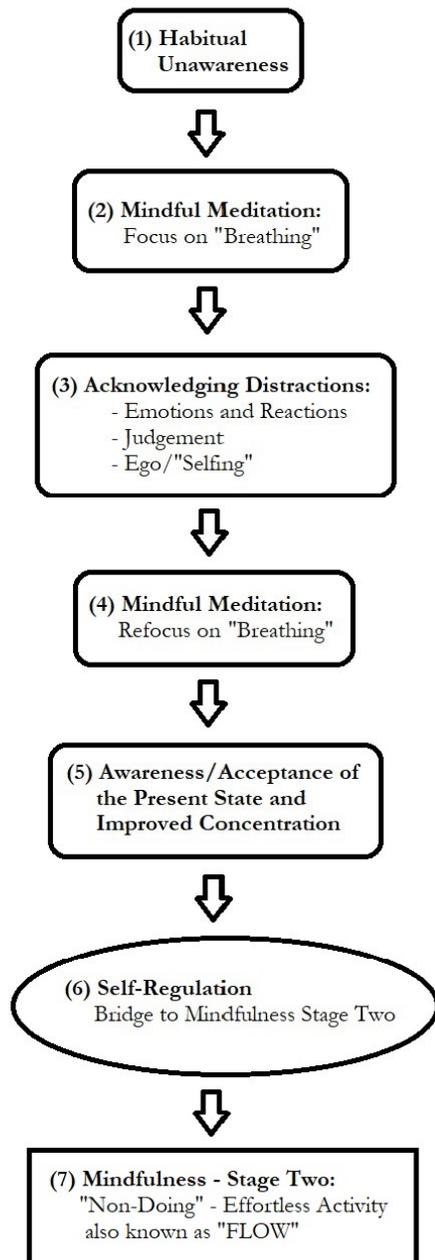


Figure 2: Comprehensive Flow Chart – Mindfulness Stage One

Stage Two – *Flow and Optimal Experience*

Happiness is...Consciousness in Order

What I “discovered” was that happiness is not something that happens. It is not the result of good fortune or random chance. It is not something that money can buy or power command. It does not depend on outside events, but rather, on how we interpret them. Happiness, in fact, is a condition that must be prepared for, cultivated, and defended privately by each person. People who learn to control inner experience will be able to determine the quality of their lives, which is as close as any of us can come to being happy.²⁵

With today’s conveniences and technological advances, it would seem that happiness is easily within reach. Most people in well developed countries are living in relative comfort with luxuries that are readily accessible, and often immediate. This immediacy is insidious. Eventually, people come to expect the immediate fulfillment of their desires, and demand constant and instant gratification. The mind is shallowly rooted in rising expectations and the continuous desire for more affluence and wealth. Nothing is ever enough. This mental condition is actually what prevents a person from reaching a state of genuine contentment. Despite this habitual mental state, most people can acknowledge that there are moments of clarity and contentment when everything seems to effortlessly line up in their favour. Events and actions run smoothly and seamlessly “flow” together. Usually these occasions take place when people are engaged in a challenging and stimulating activity in which they are truly enjoying themselves. There is a sense of exhilaration that is instilled in memory and becomes a cherished moment of *optimal experience*. An optimal experience can only take place when one is in a *flow* state of mind.

²⁵ Mihaly Csikszentmihalyi. *Flow: The Psychology of Optimal Experience* (New York: First Harper Perennial Modern Classical edition, 2008), 2.

Hungarian-American Psychologist Mihaly Csikszentmihalyi²⁶ is widely known for recognizing and naming the psychological concept of *flow* – a highly focused mental state conducive to productivity. In his research, Csikszentmihalyi focused on those enjoyable moments of *optimal experience*, and tried to understand as precisely as possible how people felt when they enjoyed themselves, and why. In his initial studies, Csikszentmihalyi worked with people considered experts in their fields – artists, musicians, chess masters, surgeons, etc. This select group of people were unique in that they sincerely expressed a sense of enjoyment in their chosen activities, spending their time doing precisely what they preferred to do. He began by collecting data through interviews and questionnaires, but inevitably devised a more precise method for measuring the quality of subjective experience, called the *Experience Sampling Method*. For one whole week, participants in his research study wore an electronic paging device, which was activated by a radio transmitter. The device would go off about eight times a day, at random intervals. Each time they heard the pager’s signal the participants would write down how they felt and what they were thinking about at that very moment. At the end of the week each participant submitted a running record of their experiences. Csikszentmihalyi called it “a written film clip of his or her life, made up of selections from its representative moments.”²⁷

From the accounts of the research participants, Csikszentmihalyi theorized that the *flow* mental state and optimal experience occurred most often when participants were engaged in an activity that they considered enjoyable, for its own sake, and that it was during these moments that their thoughts reflected a consciousness that was “harmoniously ordered.”

²⁶ Pronounced *Me-high Cheeks-sent-me-high*, according to Angela Duckworth, psychologist and author of *Grit: The Power of Passion and Perseverance* (2016). She also claims that Mihaly has gone by the name “Mike” for years.

²⁷ Csikszentmihalyi, *Flow*, 3-4.

The optimal state of inner experience is one in which there is *order in consciousness*. This happens when psychic energy – or attention – is invested in realistic goals, and when skills match the opportunities for action. The pursuit of a goal brings order in awareness because a person must concentrate attention on the task at hand and momentarily forget about everything else. These periods of struggling to overcome challenges are what people find to be the most enjoyable times of their lives. A person who has achieved control over psychic energy and has invested it in consciously chosen goals cannot help but grow into a more complex being. By stretching skills, by reaching toward higher challenges, such a person becomes an increasingly extraordinary individual.”²⁸

Staying with the Present Process – Personalized Goals and Rewards

As stated at the beginning of this section, people have become accustomed to instant gratification, and regularly succumb to escalating expectations. As soon as the basic problems of survival are solved, new needs are felt and new desires arise. Inherently, there is nothing wrong with the desire to expand goals and increase expectations. The problem lies in that people easily fixate on what they want to achieve – the “future outcome”, rather than derive pleasure from the “present process”. People are immersed in and highly influenced by their social environment, and it is that environment that encourages a fixation on the future. They have absorbed how society has structured expectations, and have learned to respond according to its rewards and punishments.

To attain order in consciousness a person must first become independent of his social environment. This is accomplished by lessening the fixation on society’s expectations, and investing attention on defining specific and realistic goals with rewards that are attainable and personally suited to each individual. A person must then allow himself to enjoy those rewards, regardless of societal expectations and external circumstances.²⁹ This process involves getting to

²⁸ Csikszentmihalyi, *Flow*, 6.

²⁹ Csikszentmihalyi, *Flow*, 16-19.

know oneself in the present moment, which is no easy task. Struggles and challenges will arise that a person must learn to face and work through.

The most important step in emancipating oneself from social controls is the ability to find rewards in the events of each moment. If a person learns to enjoy and find meaning in the ongoing stream of experience, in the process of living itself, the burden of social controls automatically falls from one's shoulders.³⁰

Understanding Consciousness

In order to stay in the present moment and to learn about oneself, one must first understand the concepts of *consciousness* and *self-awareness*. Though scientists have had differing opinions, one common explanation is: Consciousness is awareness of one's body and one's environment. Self-Awareness is recognition of that consciousness – not only understanding that one exists, but further understanding that one is aware of one's existence. Perhaps a simpler explanation is: to be conscious is to think, whereas to be self-aware is to realize that one is a thinking being and to think about one's thoughts.³¹

In his writings, Csikszentmihalyi utilizes the term consciousness synonymously with self-awareness. It is perhaps easier to consider his use of the word consciousness as an umbrella term that covers both concepts – consciousness and awareness. He defines consciousness as being aware of and having the ability to direct the course of specific *conscious events* – thoughts, sensations, feelings etc. These conscious events are guided and directed by one's *intentions*, and can therefore be thought of as *intentionally ordered information*:

³⁰ Ibid, 19.

³¹ “Does Self-Awareness Requires a Complex Brain?”, Scientific American Blog, accessed August 6, 2020, <https://blogs.scientificamerican.com/brainwaves/does-self-awareness-require-a-complex-brain/#:~:text=Scientists%20differ%20on%20the%20difference,that%20one%20is%20aware%20of>

We may call *intentions* the force that keeps information in consciousness ordered. Intentions arise in consciousness whenever a person is aware of desiring something or wanting to accomplish something. Intentions are also bits of information, shaped either by biological needs or by internalized social goals. They act as magnetic fields, moving attention toward some objects and away from others, keeping our mind focused on some stimuli in preference to others.³²

Attention or Psychic Energy

In order to recognize and act on intentions that arise in one's consciousness, one must be paying attention to them. Information enters the consciousness as a result of thinking habits based on biological or social instructions, or because a person is purposefully focusing attention on it. The human consciousness has its limitations, able to process a certain amount of information at any given time. Only so many thoughts can enter the consciousness and be recognized and handled appropriately before they begin to crowd each other out. Thoughts must follow each other consecutively, or they will get jumbled in the mind and overwhelm the "thinker." Attention is what allows a person to select the relevant bits of information that are necessary for the present moment. Once attention clarifies intention, a person can organize and evaluate her thoughts, and develop a solution that she can act on. Csikszentmihalyi calls attention *psychic energy*:

Attention is like energy in that without it no work can be done, and in doing work it is dissipated. We create ourselves by how we invest this energy. Memories, thoughts, and feelings are all shaped by how we use it. And it is an energy under our control to do with as we please; hence, attention is our most important tool in the task of improving the quality of experience.³³

³² Csikszentmihalyi, *Flow*, 27.

³³ Csikszentmihalyi, *Flow*, 33.

Psychic Entropy versus Optimal Experience

When consciousness absorbs information that conflicts with intentions or distracts one from carrying out those intentions, inner disorder or *psychic entropy* occurs. It manifests itself through emotions and reactions – pain, fear, rage, anxiety, jealousy, etc. Consciousness in disorder means that a person has lost control of his psychic energy, with attention fixated on undesirable thoughts.

Whenever information disrupts consciousness by threatening its goals we have a condition of inner disorder, or *psychic entropy*, a disorganization of the self that impairs its effectiveness. Prolonged experience of this kind can weaken the self to the point that it is no longer able to invest attention and pursue its goals.³⁴

The opposite of psychic entropy is optimal experience, which was mentioned earlier.³⁵ This comparatively positive experience occurs when information that enters consciousness is congruent with a person's goals. People who encounter optimal experience often describe it or liken it to a sense of flowing or floating. A person is in a *flow* state of mind, when attention is freely focused on the present moment and task, and allows only the pertinent information to enter consciousness, encouraging productivity. Attaining a flow state of mind requires disciplined concentration. Those who accomplish this reap rewards equal to the challenge, developing a stronger and more confident self.

When a person is able to organize his or her consciousness so as to experience flow as often as possible, the quality of life is inevitably going to improve...even the usually

³⁴ Csikszentmihalyi, *Flow*, 37.

³⁵ Optimal experience or *flow* experience is sometimes called *negentropy*, because it is the opposite of psychic entropy. (Csikszentmihalyi, *Flow*, 40)

boring routines of work become purposeful and enjoyable. In *flow* we are in control of our psychic energy, and everything we do adds order to consciousness.³⁶

Growth and Complexity

After engaging in the *flow* state and having an optimal experience, a person will learn, grow, and develop complexity. Complexity is the result of two broad psychological processes: *differentiation* and *integration*. Differentiation implies a movement towards uniqueness, separating oneself from others. Overcoming a challenge while being in the *flow* state of mind, leaves a person feeling more capable, independent and more skilled. With each optimal experience and episode of *flow*, a person increasingly becomes a more unique individual, possessing her own personal set of skills. Integration refers to a union of the different parts of the self – thoughts, intentions, feelings, and all the senses are harmoniously focused on the same goal. At the culmination of a *flow* episode, one feels more “together” than before, both internally, yet also with respect to other people and the world in general. There is a willingness to connect with people, ideas, and entities beyond the self, because the self feels more capable and confident in its ability to contribute to a greater whole. A more complex self is one that is successful in combining and balancing these two psychological processes.

If one is only differentiated and not integrated, he risks becoming self-centered. Though perhaps attaining great accomplishments, he achieves only for the self, and doesn't strive to connect to the greater whole. On the other hand, a person based exclusively on integration risks conformity, and lacks autonomous individuality.³⁷

The self becomes complex as a result of experiencing *flow*. Paradoxically, it is when we act freely, for the sake of the action itself rather than for ulterior motives, that we learn to become more than what we were, When we choose a goal and invest ourselves in it to the

³⁶ Csikszentmihalyi, *Flow*, 40.

³⁷ *Ibid.*, 41-42.

limits of our concentration, whatever we do will be enjoyable. And once we have tasted this joy, we will redouble our efforts to taste it again. This is the way the self grows...*Flow* is important both because it makes the present instant more enjoyable, and because it builds the self-confidence that allows us to develop skills and make significant contributions to humankind.³⁸

Autotelic and Exotelic

The term *autotelic* derives from two Greek words – *auto* meaning self, and *telos* meaning goal. It refers to a self-contained activity that is undertaken with no expectation of some future benefit, and is done because the task itself is intrinsically rewarding. For example, teaching children in order to turn them into good citizens is not autotelic, whereas teaching children because one enjoys interacting with them is. When the activity is autotelic, that person is paying attention to the activity for its own sake, and not focused on its consequences. Conversely *exotelic* activities are done for external reasons only.

Most of the things people do are a combination of autotelic and exotelic. Usually, external incentives are needed to take the first steps in an activity that requires a difficult restructuring of attention. Most enjoyable activities demand an effort that initially one is reluctant to make. However, when the activity starts providing positive feedback, reinforcing the person's skills, it begins to be intrinsically rewarding. For examples, surgeons enter into their long period of training usually because of exotelic expectations: to help people, to make money, and to acquire prestige. After a while, some will begin to enjoy their work, and the performance of surgery becomes autotelic as well.³⁹

The autotelic experience, or *flow*, lifts the course of life to a different level. Alienation gives way to involvement, enjoyment replaces boredom, helplessness turns into a feeling of control, and psychic energy works to reinforce the sense of self, instead of being lost in

³⁸ Csikszentmihalyi, *Flow*, 42.

³⁹ *Ibid*, 67 – 78.

the service of external goals. When experience is intrinsically rewarding life is justified in the present, instead of being held hostage to a hypothetical future gain.⁴⁰

Pleasure versus Enjoyment

When people are asked to reflect on what makes their lives rewarding, they tend to recall events and experiences that are not only *pleasurable*, but also *enjoyable*. Experiences can give both pleasure and enjoyment, yet the two sensations are quite different. Pleasure can be experienced without the investment of psychic energy, whereas enjoyment can only happen with the investment of attention. For example, people will derive pleasure from passively listening to music. However, a musician's highly trained ear will pick up more nuances, and enjoy the experience even more.

Enjoyable events take place when a person has gone beyond what she expected to accomplish. Enjoyment is characterized by a sense of forward movement, novelty, accomplishment, and is usually found when engaging in an activity that stretches one's ability. A person may not find an activity particularly pleasurable at the moment, yet when looking back on it, she will remember it as enjoyable, knowing that as a result of it, the self has changed, grown, and has become more complex.⁴¹

The Elements of Enjoyment

Csikszentmihalyi analyzes what makes a flow activity enjoyable by breaking it down into eight major components:

- 1) A Balance of Challenge and Skill
- 2) Spontaneity - the Merging of Action and Awareness
- 3) Clear Goals

⁴⁰ Csikszentmihalyi, *Flow*, 69.

⁴¹ *Ibid*, 46.

- 4) Clear Feedback
- 5) Concentration on the Task at Hand – Temporal Focus
- 6) The Loss of Self-Consciousness
- 7) The Transformation of Time
- 8) A Sense of Control

A Balance of Challenge and Skill

Csikszentmihalyi's studies show that in all of the activities that people reported engaging in; enjoyment arose at a very specific point – when the opportunities for action perceived by the individual are equal to his capabilities. For example, a piece of music that is too simple relative to one's listening skills will be boring, while music that is too complex will cause frustration. "Enjoyment appears at the boundary between boredom and anxiety, when the challenges are just balanced with the person's capacity to act."⁴²

Spontaneity – The Merging of Action and Awareness

A challenging activity that demands the use of all of a person's applicable skills means that a person's attention is completely absorbed by the activity. One's psychic energy is concentrated solely on the relevant stimuli, resulting in a universal and distinctive feature of optimal experience: a person becomes so deeply involved in what he is doing that the activity takes on a sense of spontaneity and automaticity. Self-awareness blends and merges seamlessly with the actions being performed. The word "flow" aptly describes this optimal experience, in that the performance seems to flow out of the person effortlessly. Although it can appear effortless, a skilful cooperation between physical exertion and mental activity is absolutely required.⁴³

⁴² Csikszentmihalyi, *Flow*, 52.

⁴³ *Ibid.*, 53-54.

Clear Goals and Feedback

In order for an activity to be conducive to flow and optimal experience, the goals set must be clear and the feedback immediate. For activities such as tennis or mountain climbing, the rules of the task and the goals to be set are more apparent. Creative activities that are open-ended in nature present more of a challenge. For instance, a composer of music may know that she wishes to write a song, but her goals usually start off quite vague. Whether or not the goals of an activity are straightforward, it is imperative that a person learns to set goals and to recognize and gauge feedback. Otherwise, she will not enjoy that activity. A person must develop a strong personal sense of what she intends to accomplish. Returning to the example of the composer – in the beginning she may not have a clear image of the finished composition. Yet, when the work has progressed to a certain point, she should have a stronger sense of direction for her work, and should also have the ability to gauge if her music is reflecting her creative intentions. If one does not develop internal guidelines, it will be impossible to experience *flow*. Goals can be flexible, sometimes invented and negotiated on the spot. What constitutes as feedback can also vary considerably in different activities. Feedback is essential because it provides vital information to a person, helping her gauge how close she is to accomplishing the goal, or if it has already been accomplished. Such knowledge builds confidence, creating order in consciousness and strengthening the structure of the self.⁴⁴

Concentration on the Task at Hand – Temporal Focus

One of the most frequently mentioned features of flow is that, during an optimal experience, one is able to forget all the unpleasant thoughts and worries that can preoccupy one's consciousness. Enjoyable activities require a complete focusing of psychic energy, which leaves

⁴⁴ Csikszentmihalyi, *Flow*, 54-57.

no room in the mind for irrelevant information. An avid rock climber shared his experience of the flow state with Csikszentmihalyi, describing it as if his memory input had been cut off. All he could remember was the last thirty seconds, and all he could think ahead was the next five minutes. Csikszentmihalyi calls it *temporal focus*. Any activity that requires a high level of concentration will have a similarly narrow time frame.⁴⁵

The Loss of Self-Consciousness

Every day, people are constantly reminded of their vulnerability. When one encounters a threat to the self, there is a need to restore the constructed image of self back into awareness, so that one can determine whether or not the threat is serious, and decide how to deal with it. Every time this occurs, psychic energy is lost in trying to restore order to consciousness.

When a person is enjoying an activity and is experiencing a *flow* state of mind, there is no room in the consciousness for self-scrutiny. Temporal focus allows only the relevant information for the completion of the task at hand to enter the consciousness, preventing the mind from dwelling on the self:

What slips below the threshold of awareness is the *concept* of self, the information we use to represent to ourselves who we are. And being able to forget temporarily who we are seems to be very enjoyable. When not preoccupied with ourselves, we actually have a chance to expand the concept of who we are. Loss of self-consciousness can lead to self-transcendence, to a feeling that the boundaries of our being have been pushed forward.⁴⁶

It is a paradoxical relationship in that one must lose the sense of self in the *flow* state experience in order to have it emerge stronger afterward. Giving up self-consciousness is necessary for building a stronger self-concept. In *flow*, a person is challenged to do his best,

⁴⁵ Csikszentmihalyi, *Flow*, 58.

⁴⁶ *Ibid.*, 64.

constantly improving his skills, with no opportunity to reflect on what this means in terms of the self. If he did take a moment to become self-conscious, he would disrupt his psychic energy and lose his *flow* state of mind. However, if he completes the activity within the *flow* state, and allows self-consciousness to resume through self-reflection afterward, he will find that the self has changed. It is no longer the same self that existed prior to the flow experience. That self is now enriched by new skills and fresh achievements.⁴⁷

The Transformation of Time

According to people's testimonies, during optimal experience or the *flow* state, time passes differently – either speeding up or slowing down. In general, most people report that time seems to pass much faster when engaged in a flow activity, with hours passing by in minutes. Occasionally the reverse occurs. Ballet dancers describe how a difficult turn that takes a fraction of a second to complete in real time, seemingly stretches out into minutes for the performers. It is not clear whether this aspect of *flow* is simply a by-product of intense concentration, or whether it is something that contributes to the positive quality of the experience. Indeed, realizing that one is free from the tyranny of time can add to the exhilaration felt when completely engaged in an activity.⁴⁸

A Sense of “Exercising” Control

Optimal or flow state experience is typically described as involving a sense of control. Perhaps a more precise description would be lacking the sense of worry about losing control.

⁴⁷ Csikszentmihalyi, *Flow*, 65-66.

⁴⁸ *Ibid.*, 66-67.

Activities conducive to flow state experiences “are so constructed as to allow the practitioner to develop sufficient skills to reduce the margin of error to as close to zero as possible.”⁴⁹

Rock climbers recognize two types of dangers or challenges: *objective* and *subjective* ones. Objective dangers are the unpredictable physical events that a climber might encounter while scaling the mountain – a sudden storm, an avalanche, a falling rock, etc. One can prepare oneself against these threats, but they can never be completely foreseen. Subjective dangers are those that arise from the climber’s lack of skill, for instance, the inability to accurately estimate the difficulty of a climb in relation to one’s ability. Every kind of activity will present its own set of objective and subjective challenges. It is crucial to be able to recognize the difference between these two types of challenges. A person can then acknowledge what is within his realm of control, and prepare accordingly. What people enjoy during the performance of an activity is not the sense of being in control, but rather the *sense of exercising control* in difficult situations. One can confidently face challenges that are often unpredictable, utilizing personal abilities that have been fine tuned to be as consistent and reliable as possible, to help reduce that margin of error.⁵⁰

The Process of Maintaining the Flow State

The diagram below helps to explain the process of staying in flow while engaging in an activity. The y-axis represents the increasing *challenges* of the tasks, while the x-axis represents the increasing level of the *skills*. The diagram demonstrates how person “A”, or Alex, is learning to play tennis. This diagram shows Alex at four different points in time, during his tennis training. At **point A1**, Alex is just beginning to play and has practically no skills. His only challenge is to hit the ball over the net, which is not a very difficult task. Alex finds this activity

⁴⁹ Csikszentmihalyi, *Flow*, 60.

⁵⁰ *Ibid.*, 59-61.

enjoyable, because the level of difficulty is just right for his rudimentary skills. At this point he will probably be in a comfortable yet low state of *flow*; however he cannot stay there for long.

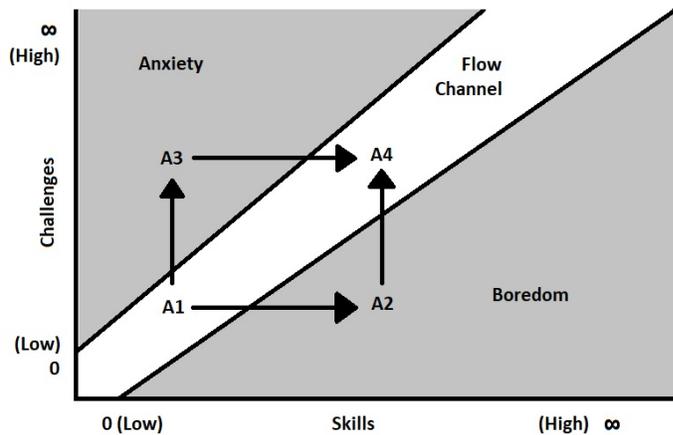


Figure 3: The Process of Maintaining the Flow State⁵¹

As Alex continues to practice, his skills will naturally improve. Eventually he will grow tired of just batting the ball over the net. Hence, **point A2** is reached, a state of boredom.

Another possible event that might occur is Alex meeting a more practiced opponent. He will realize that there are much harder challenges to face than just lobbing the ball. At **point A3**, he will feel some anxiety concerning his lower level of performance.

Since boredom and anxiety are undesirable experiences, Alex will be motivated to return to the *flow* channel where he experienced enjoyment. In order to overcome both boredom and anxiety, Alex must set for himself a new and more difficult goal that challenges and raises his skill level. As he practices and gradually improves to match the new level of difficulty, Alex will eventually find himself at **point A4**, back in the *flow* channel, yet now at a higher and more

⁵¹ Csikszentmihalyi, *Flow*, 74.

complex stage. He will enjoy playing tennis at point A4 for a little while, until his skill level surpasses the present task yet again.

It is this dynamic feature that explains why flow activities lead to growth and discovery. One cannot enjoy doing the same thing at the same level for so long. We grow either bored or frustrated; and then the desire to enjoy ourselves again pushes us to stretch our skills, or to discover new opportunities for using them.⁵²

This process will continually repeat itself with Alex becoming a more skilled player and complex individual, each time he returns to the flow channel.

Choosing Enjoyment

Even though a person may be engaged in an activity that is normally conducive to *flow*, it doesn't necessarily mean that he will achieve an optimal experience and a *flow* state of mind. The rules or boundaries of an activity help to direct energy in patterns that encourage enjoyment. However, whether or not enjoyment is actually felt, is ultimately up to each individual. A person's consciousness is free to follow its own assessment of the experience. For example, a professional football player may be bored of playing the game, or is allowing anxieties about his contract or a competitor enter his consciousness, preventing him from deriving enjoyment from his profession. On the contrary, people can find everyday activities such as chores or raising children, *flow* inducing. These people have learned to perceive opportunities in daily routine tasks that others cannot see.⁵³

Any task can be transformed into a *flow* state activity if a person chooses to find enjoyment in doing it. The essential steps in this process are: (a) to set an overall goal, and as

⁵² Csikszentmihalyi, *Flow*, 75.

⁵³ *Ibid.*, 75-76.

many specific sub-goals as are realistic and feasible; (b) to find ways of measuring progress with regards to the chosen goals; (c) to keep concentrating on the task at hand, making finer and finer distinctions in the challenges of the activity; (d) to develop the skills necessary to interact with the opportunities available, and (e) to keep raising the stakes or levels of difficulty if/when the activity becomes boring. Ultimately, enjoyment does not depend on *what* you do, but rather on *how* you do it.⁵⁴

Summary

Mihaly Csikszentmihalyi's concepts of optimal experience and *flow* can be combined with Jon Kabat-Zinn's method of Mindfulness Meditation. Together they outline a comprehensive process that one can undertake in order to develop into a grounded, proficient, considerate, and overall mindful human being. The step by step comprehensive flow chart summarizing Kabat-Zinn's approach to Mindfulness Meditation has been expanded to incorporate Csikszentmihalyi's research, and can be found at the end of this section.

Going through the chart, most people begin in a mindless state, ruled by (1) *habitual unawareness* and constantly expecting *instant gratification*. Disorganized thoughts combined with the need for immediate fulfillment of desires can cause frustration and dissatisfaction. A call to (2) *mindfulness meditation* is the first step in calming the mind, training a person to focus solely on the inhalation and exhalation of the breath. Through this simple action, a person begins to (3) *recognize and acknowledge the various distractions* that easily pull focus away from the breath. The challenge lies in being able to push those distracting thoughts away, and (4) *bring the focus of the mind back to breathing*.

⁵⁴ Csikszentmihalyi, *Flow*, 97-99.

Step (5) *Understanding Consciousness and Self-Awareness*, exhibits some crossover and similarities in concepts and terminology between Kabat-Zinn and Csikszentmihalyi – i.e. paying attention or psychic energy, improved concentration, and acceptance of one’s present state of ability and circumstance. Csikszentmihalyi goes one step further, pointing out that once people have meditated and deeply reflected, they will better know and understand themselves. From there they can define realistic and personalized goals and rewards, leading to a unique sense of self and autonomy. This notion connects to the next section of the chart - (6) *Self-Regulation*. In order to explain the concepts of *flow* and optimal experience, it was necessary for Csikszentmihalyi to provide some context. He broadly outlines a structure for a Self-Regulation procedure: setting realistic and specific goals and sub-goals, measuring progress and acquiring feedback, making finer and finer distinctions in the challenge, developing skills to match the opportunities available, and raising the stakes or difficulty levels of an activity, when the activity becomes boring. The topic of Self-Regulation, the bridge between Mindfulness Stage One and Mindfulness Stage Two, will be further substantiated in the next section of this paper, through the work of Barry J. Zimmerman, and the in-depth research of Anders Ericsson on experts and *Deliberate Practice*.

Step (7) *Mindfulness Stage Two* is fully fleshed out in the chart below after having examined the key points of Csikszentmihalyi’s research throughout this section. The second stage of Mindfulness is *consciousness in order*. There is an ease and flow in carrying out a chosen activity, which is why it is called a *flow* state of mind. Within this *flow* mental state, a person has the opportunity to encounter an *optimal experience*, which is characterized by several factors: The task is *enjoyable* to perform, seemingly *effortless* and *spontaneous*. *Time transforms*, either passing quickly through one’s enjoyment, or slowing down to focus on the

execution of the task. Due to the fact that psychic energy is so concentrated on the task at hand, there is little to no room for anxiety or distractions. The mind is in *temporal focus* – only able to think back on the last thirty seconds or so, and to think ahead on the next five minutes. With temporal focus, there is also a *loss of self-consciousness*, giving the self a chance to push to a higher level of achievement. Only after the task is completed will a person have time to regain self-consciousness and self-reflect, finding that the self has grown in *complexity*. The performance of the activity, which may have been initially rooted in *exotelic* reasons – money, prestige, fame – is now performed for *autotelic* reasons – the intrinsic reward of enjoying the task itself, no longer focusing on the consequences. Finally, a person enjoys an activity because they have the *sense of exercising control* in difficult situations. Abilities are fine tuned and prepared to perform a task as efficiently as possible. A person can confidently face challenging and unpredictable situations, knowing they have the skills to reduce the margin of error. The *flow* state of mind and optimal experience can occur in any activity, as long as a person chooses to derive enjoyment from it, by paying exclusive attention to the performance of it, and essentially “doing the work.”

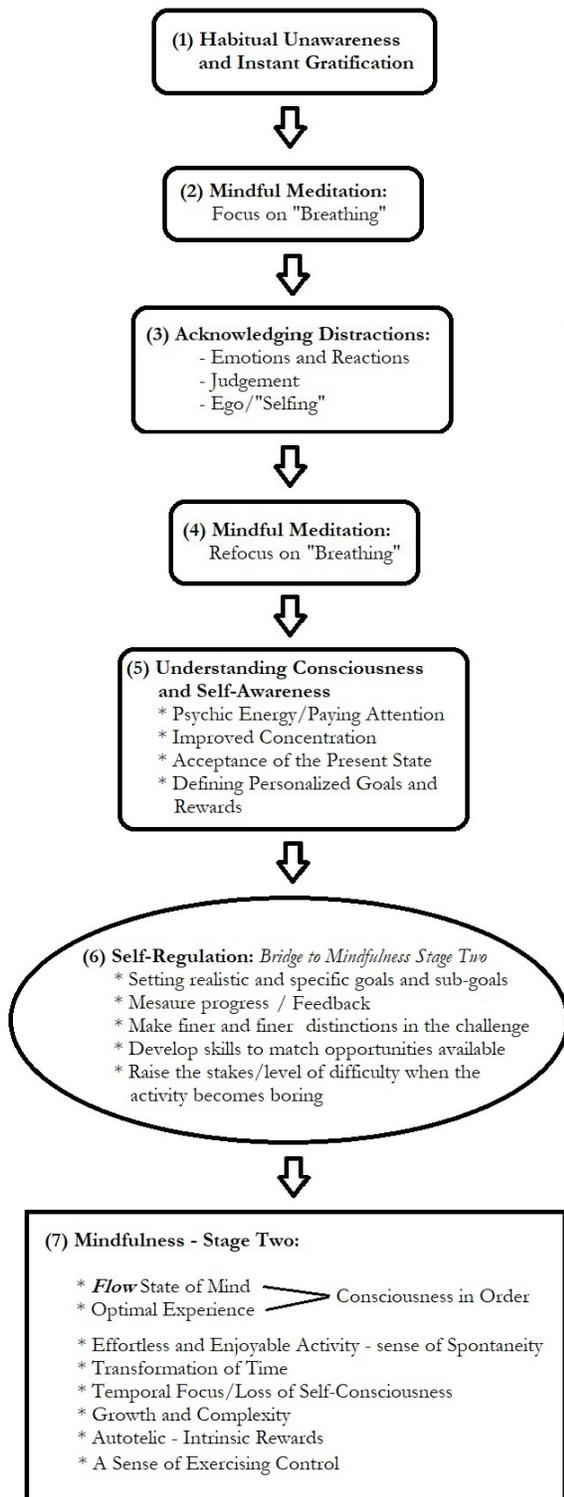


Figure 4: Comprehensive Flow Chart – Adding Mindfulness Stage Two

Self-Regulation – a Bridge between Mindfulness Stages One and Two

Defining Self-Regulation

Connecting Concepts

Self-regulation is a procedure that reflects a unique sense of self and autonomy through (1) the setting of realistic and specific goals and sub-goals, (2) measuring progress and acquiring feedback, (3) making finer and finer distinctions in the challenge, (4) developing skills to match the opportunities available, and (5) raising the stakes or difficulty levels of an activity when the activity becomes repetitive and uninteresting.

Barry J. Zimmerman, a professor of educational psychology and an educational researcher at the City University of New York, is known for his research and theories on self-regulation or *self-regulated learning* (SRL). His studies cover the implementation of SRL in the school classroom, and have broadened over time to cover other fields including SRL in musical practice.

A Brief History of SRL Studies

During the 1960s and 1970s researchers became interested in the role of self-regulatory processes in human development. Self-regulated learning became a popular topic due to widespread concerns about students struggling to attain academic competence and control. Underachievement in school had been linked to a lack of self-regulation. Evidence indicated that

procrastination led to low levels of learning and performance, as well as to high levels of dissatisfaction and stress.⁵⁵

One historic group of studies⁵⁶ focused primarily on *cognitive* and *metacognitive* issues. *Cognition* refers to conscious intellectual activity such as thinking, reasoning, or remembering.⁵⁷ *Metacognition* refers to the learner's knowledge about learning itself (i.e., thinking about thinking). Metacognitive skills include planning, monitoring, and the evaluation of learning, incorporating knowledge of available strategies and awareness of personal strengths and weaknesses.⁵⁸ In these studies, students were taught to utilize specific cognitive strategies to enhance learning; for example, a multi-step solution for mathematical division problems. Researchers found that these strategies usually resulted in higher levels of learning, and that these strategies could also be learned and transferred to *similar* problems when encountered *immediately* after instruction. However, students seldom remembered to use these cognitive strategies when working on their own, nor could they instinctively apply them to new tasks or relate them to real-life contexts. At the time, these limitations in learning were frequently ascribed to a lack of personal effort or attributed to deficiencies in metacognition (e.g. students' inability to appreciate or understand the utility of the strategy). Initially, the self-regulated learning of students was narrowly perceived as the ability to function academically on their own.

⁵⁵ Barry J. Zimmerman, "Motivational Sources and Outcomes of Self-Regulated Learning and Performance." In *Handbook of Self-Regulation of Learning and Performance*, ed. Barry J. Zimmerman, Dale H. Schunk (New York: Routledge – an imprint of the Taylor & Francis Group, 2011), 49.

⁵⁶ Barry J. Zimmerman and Dale H. Schunk, "Self-Regulated Learning and Performance: An Introduction and an Overview." In *Handbook of Self-Regulation of Learning and Performance*, ed. Barry J. Zimmerman, Dale H. Schunk (New York: Routledge – an imprint of the Taylor & Francis Group, 2011), 1-12.

⁵⁷ "Definition of Cognitive," Merriam-Webster, accessed August 25, 2020, <https://www.merriam-webster.com/dictionary/cognitive>.

⁵⁸ Nancy H. Barry and Susan Hallam, "Practice." In *The Science and Psychology of Music Performance: Creative Strategies for Teaching and Learning*, ed. Richard Parncutt, Gary E. McPherson (New York: Oxford University Press, 2002), 154.

However, researchers began to dig deeper, seeking to understand *where*, *how*, and *why* some students self-regulate, while others do not. The *where* question deals with the performance and task context. The *how* question deals with the metacognitive aspects of SRL. The *why* question focuses on the *motivational* aspects of self-regulation, which is a core topic of Zimmerman's research. In addressing these questions, researchers have developed a more complex, multi-dimensional definition of SRL:

Students are self-regulated to the degree they are metacognitively, motivationally, and behaviourally active participants in their own learning processes. More specifically, these metacognitive processes include goal setting, self-monitoring, and self-evaluative feedback loops. Motivational feelings and beliefs refer to self-regulated learners' display of personal initiative, perseverance, and adaptive skill. Behaviorally, self-regulation refers to specific beneficial actions, such as record keeping, environmental structuring, and help-seeking.⁵⁹

Motivation is Key

Positive motivational feelings and beliefs play a vital role in initiating, guiding and sustaining students' efforts to self-regulate their learning. A high level of motivation can:⁶⁰

- 1) Increase students' *attention* to their learning processes and outcomes. Students who track their feedback closely are likely to learn more effectively.
- 2) Induce students' to repeatedly *choose a task*. For example, a student committed to learning a foreign language will more likely choose to practice this task during free time.
- 3) Increase students' *effort* to learn a difficult task. For instance, a student who seeks a top grade in class will study harder.
- 4) Increase student's *persistence* on a time-consuming task, such as achieving mastery of a complex skill.

⁵⁹ Barry J. Zimmerman, *Motivational Sources*, 49.

⁶⁰ *Ibid.*, 50.

More recent studies conducted in classroom settings incorporate SRL intervention programs that involve a mix of cognitive, metacognitive and motivational strategies. *Cognitive strategies* refer to the direct regulation of learned information (e.g. a math calculation strategy). *Metacognitive strategies* refer to second order cognitions designed to control, monitor and evaluate learning and cognitive activities (e.g. strategy knowledge). *Motivational strategies* include awareness and knowledge of self-efficacy, attributional orientation (defined in next section), action control methods (i.e., control of voluntary action) and feedback.

Research results took note of the effect of different kinds of motivational strategy on the students' overall academic performance. The most effective one was a feedback strategy, which guided student's self-reflection by providing feedback regarding the investment of time and effort to attain their goals. It had a positive impact on both the students' academic learning, as well as on their level of motivation. In general, studies on interventions that emphasized motivational strategies or that incorporated a combination of metacognitive and motivational strategies resulted in a positive influence on the overall academic achievements of students.⁶¹

A Cyclic View of Self-Regulated Learning

Zimmerman views self-regulated learning as an open-ended cyclic process. He developed a chart to provide a visual representation of this process occurring in three phases: *forethought*, *performance*, and *self-reflection*. Each phase is broken down and gives insight as to how cognitive, metacognitive and motivational strategies are incorporated within self-regulated learning.

⁶¹ Barry J. Zimmerman, *Motivational Sources*, 59.

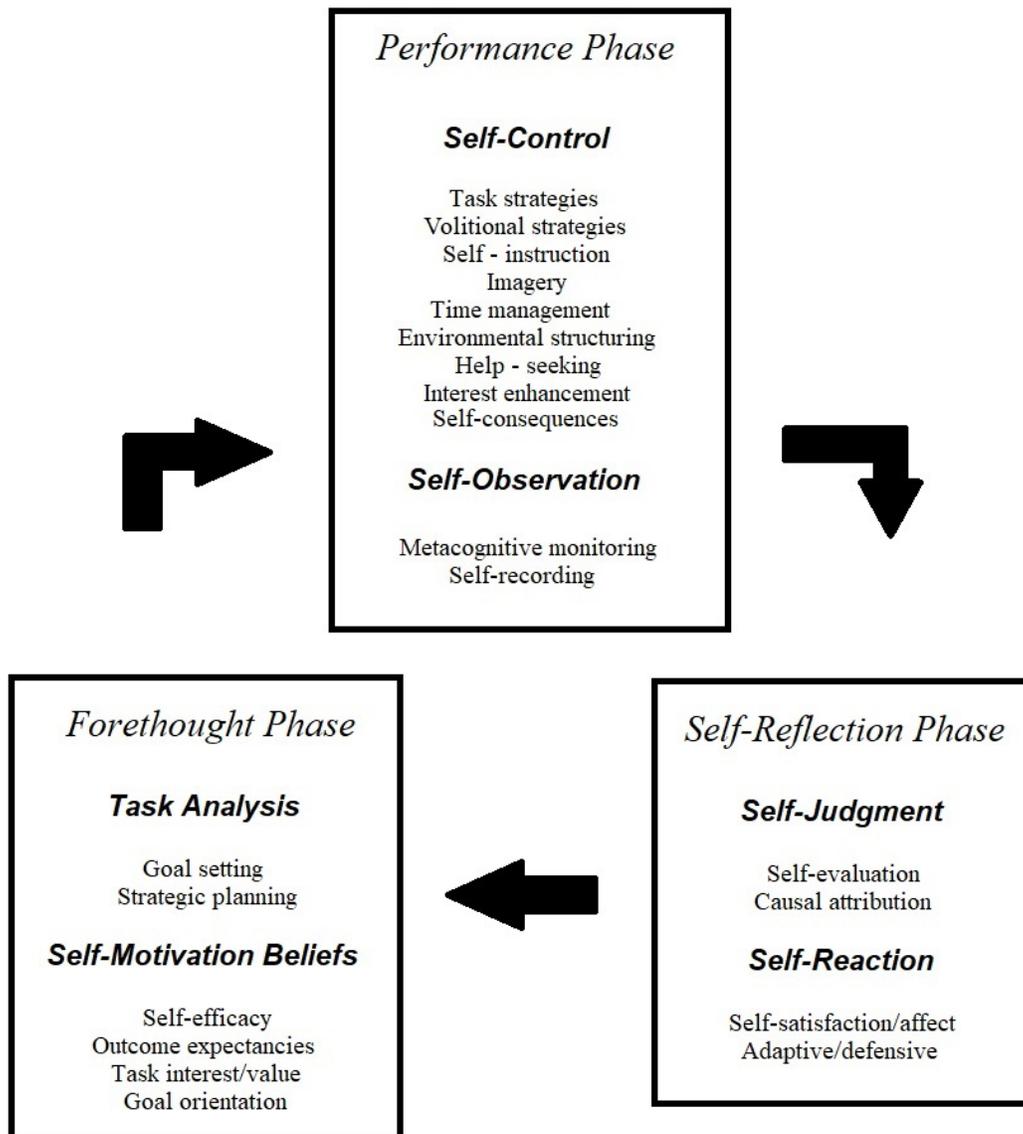


Figure 5: Phases and Sub-Processes of Self-Regulation – a Cyclic View ⁶²

⁶² Barry J. Zimmerman and Magda Campillo, “Motivating self-regulated problem solvers.” In *The Nature of Problem Solving*, ed. J.E. Davidson, R.J. Sternberg (New York: Cambridge University Press, 2003), 239.

Forethought Phase⁶³

The cycle begins with the forethought phase, highlighting two major sources of self-regulation: *task analysis* and *self-motivation beliefs*.

A key aspect of *task analysis* is *goal setting*. Self-regulated students often prepare specific and more achievable short term goals which serve as paths towards greater long-term goals. Students who are poor at self-regulation typically set vague and unclear goals.

Another aspect of task analysis is *strategic planning*. Self-regulated learners select or create strategies that guide cognition, control affect (a broad range of feelings), and direct motoric execution (volitional movement). Poorly self-regulated learners usually begin studying without clear plans and rely on impulsive reactions as feedback to enhance their learning.

Self-motivation beliefs include *self-efficacy*, *outcome expectancies*, *task interest/value*, and *goal orientation*.

Self-efficacy refers to expectations regarding personal capabilities to organize and execute courses of action. It plays a major role in motivating the processes of goal setting and the selection of strategies during the forethought phase, as well as during the performance phase. Self-efficacious people utilize more cognitive and metacognitive strategies, work harder, and persevere longer in the face of adversity.

Outcome expectancies refer to how a task fits into one's future plans. It is an assessment of whether or not an individual's present short-term conditions realistically line up with expected long-term future outcomes.

Task interest/value refers to a student's perceived worth of a particular task. It is predictive of students' academic achievement, and extends beyond mere liking of a task/activity

⁶³ Zimmerman, *Motivational Sources*, 50-57.

to actually choosing and pursuing it during the performance phase. Four major classes of values have been defined: 1) *Attainment value* (or importance) – this value is often linked to a student’s sense of identity, connected to the perception of competence on a particular task (i.e., envisioning oneself as having a future career performing this task). 2) *Utility value* (or usefulness) – regarding the functional value of a task (e.g., one is motivated to study French because of plans to spend a semester in France). 3) *Cost* – refers to the perceived consequences of pursuing a valued task, including time spent, effort expended, and the inability to pursue alternative activities. 4) *Intrinsic value/motivation* - the enjoyment and valuing of an activity for its inherent properties rather than its future outcomes. Intrinsic motivation involves the perceived influence of types of *rewards* on how students value a task or activity. Rewards can have a *controlling function* when they are given for mere compliance in completing the task or activity. As a result, students will become *extrinsically* motivated, valuing an activity for its future outcomes. When rewards have an *informing function*, providing information about an individual’s competence and autonomy, students will then become *intrinsically* motivated, and will find enjoyment and satisfaction in the performance of the task itself.

Regarding *goal orientation*, two types have been distinguished: 1) *performance goals*, and, 2) *learning goals*. A performance goal orientation reflects a fixed mindset and is based on an underlying *entity* assumption (i.e., intelligence is fixed). It motivates learners to gain only positive judgements of their current level of personal competence, and to avoid negative judgements. Learners who are confident and have a high level of self-efficacy may find a performance goal orientation to be advantageous and will seek opportunities to demonstrate their abilities. However, a performance goal mindset is often linked to feelings of insecurity in learners, who will try to avoid unfavourable social comparison with others.

A learning goal orientation, also known as mastery or task goal orientation, reflects a growth mindset and is based on an *incremental* assumption (i.e. intelligence is malleable). It involves gaining positive self-judgements, motivating both confident and insecure learners to seek opportunities for self-improvement and advancement of their abilities.

Performance Phase⁶⁴

Self-regulated learning processes utilized during this phase have been grouped into two major classes: *self-control* and *self-observation*.

Self-control is further broken down in to several constituents including: *task strategies*, *volitional strategies*, *self-instruction*, *imagery*, *time management*, *environmental structuring*, *help-seeking*, *interest enhancement*, and *self-consequences*.

Task strategies are initially modeled or socially guided. Over time, these strategies become more and more self-initiated. At the highest level are self-regulated learners who are methodical in the way they approach their learning and not only plan how they will approach a task, but also spontaneously invent increasingly advanced strategies to improve their performance of a task.⁶⁵

Volitional strategies enable students to focus their concentration and sustain their efforts in dealing with personal and environmental distractions. These strategies include tactics that deal with action control (i.e., control of voluntary action) and emotional state control (i.e., block ruminations over prior errors).

⁶⁴ Zimmerman, *Motivational Sources*, 54-60.

⁶⁵ Gary E. McPherson and Barry J. Zimmerman, "Self-Regulation of Musical Learning: A Social Cognitive Perspective." In *The New Handbook of Research on Music Teaching and Learning*, ed. Richard Colwell, Carol Richardson (New York: Oxford University Press, 2002), 333.

Self-instructions are personally developed statements about what needs to be done, and can help by orienting, organizing, and structuring behaviour. Self-instructions can also help students deal with difficult behavioural characteristics such as impulsiveness and with emotional reactions such as frustration and anxiety. Developing and using appropriate personal self-instructions allows a person to mentally “talk themselves through” a task, and helps control how one thinks and concentrates.⁶⁶

Imagery refers to creating or recreating vivid mental images to assist learning and performance. Imagery is one of the most commonly used self-regulation strategies in sport, and involves visualizing the appropriate behaviours or outcomes that athletes wish to achieve. For example, a basketball player may imagine successfully shooting a free throw just before he or she actually takes the shot. This process has two functions: (a) it helps the athlete improve or refine a skill that needs to be executed successfully, and (b) it can help relieve anxiety and instil more positive emotions.⁶⁷ Imagery plays a critical role in motor learning – “referring to the several-step process by which muscular skills are acquired, retained and ultimately repeated automatically”⁶⁸. Though originating in the field of sports, it is a self-regulation strategy that can be applied to any task or discipline.

⁶⁶ Karen R. Harris and Steve Graham, “Self-Regulated Learning processes and Children’s Writing.” In *Handbook of Self-Regulation of Learning and Performance*, ed. Barry J. Zimmerman, Dale H. Schunk (New York: Routledge – an imprint of the Taylor & Francis Group, 2011), 190.

⁶⁷ Anastasia Kitsantas and Maria Kavussanu, “Acquisition of Sport Knowledge and Skill: The Role of Self-Regulatory Processes.” In *Handbook of Self-Regulation of Learning and Performance*, ed. Barry J. Zimmerman, Dale H. Schunk (New York: Routledge – an imprint of the Taylor & Francis Group, 2011), 219.

⁶⁸ Lynn Holding, “Voice Science and Vocal Art, Part Two: Motor Learning Theory.” *Journal of Singing* 64, no. 4 (March/April 2008): 417.

Time management is the self-regulatory practice of using the time available in a useful and effective way.⁶⁹ It is linked to the delay of gratification - the conflict between immediate and delayed outcomes that an individual encounters. For instance, a student has to give up a pleasurable activity in order to study for an exam. It is also connected to the intrinsic and extrinsic properties of an activity. For example, students would be more motivated to devote time and self-regulate their learning of a present activity, if they feel it will be useful in a professional career (i.e. future intrinsic outcome).

Environmental structuring, as a self-regulatory process, involves making one's physical surroundings more attractive and conducive for the completion of a task. For example, maintaining an organized office space can help clarify one's mind and motivate an individual to be more effective at work.

Help seeking has been found to be an important SRL skill, beginning its development at an early age. Social cognitive researchers have advocated the use of parental, instructor or peer models. A student who observes a *coping model* persist and eventually succeed on a task will be motivated to emulate this model with the hopes of attaining similar success. These "modelling experiences" can encourage and enhance a student's sense of self-efficacy, learning on their own, but also proactively seeking social assistance when learning falters. At-risk learners (students who are in danger of failing) are often unwilling to seek help, because they fear exposing their limitations. However, students who have a higher level of self-efficacy, and have previously experienced positive outcomes from mentoring models, are more willing to seek assistance, and are more confident that it will lead to the betterment of their learning.

⁶⁹ "Time management," Cambridge Dictionary, accessed August 25, 2020, <https://dictionary.cambridge.org/dictionary/english/time-management>

Interest enhancement involves converting a difficult task into an engaging challenge. In addition to acting as positive self-regulatory models, instructors can foster SRL in students by selecting interesting instructional tasks. Making a learning task more interesting and accessible is advantageous for motivating students, especially at the outset of skill development. Students gain confidence in their self-efficacy as they accomplish difficult learning tasks, increasing their motivation and level of performance.

Self-consequence strategies involve setting rewarding or punishing contingencies for oneself. Praise has been found to work well in encouraging poorly motivated students to engage in SRL. There are concerns regarding tangible rewards in that students may become dependent on them and will not undertake tasks that do not provide tangible rewards. Intrinsic motivation researchers believe that it may undermine the development of long-term motivation to learn on one's own. Other researchers suggest that the effects of tangible rewards on students' motivation can be positive if given contingently for increasing personal skill. Rewards given in this manner can motivate by conveying information on an individual's increasing self-competence.

Self-observation consists of *metacognitive monitoring* and *self-recording* which involves observing and taking note of specific aspects of one's performance, the conditions that surround it, and the effects that it produces. Studies have shown that tracking changes in one's learning outcomes can produce motivational effects, inspiring learners to expend greater effort.

Self-reflection Phase⁷⁰

Self-reflection phase processes occur after learning efforts, examining information acquired from those learning experiences. These self-reflections, in turn, influence subsequent

⁷⁰ Zimmerman, *Motivational Sources*, 55-58.

forethought processes and beliefs, thus completing a self-regulatory cycle. The two major classes of self-reflection processes are *self-judgements* and *self-reactions*.

Self-judgements refer to the self-evaluation of one's learning performance and the attribution of causal significance to the results. *Self-evaluation* involves comparing one's performance with a standard or goal. Motivation is derived not only from the objective properties of one's feedback (e.g. the number of items passed on a test), but also on the appropriateness of the standard. For instance, high absolute standards can overwhelm a student and can lead to adverse reactions against the self.

Causal attribution is the process of trying to determine the causes of people's behaviour. Attributions are made to personal or situational causes. It can have a major impact on students' motivation to learn. Learners often appraise their causal beliefs subjectively, attributing their results erroneously to *uncontrollable causes* such as low ability. This can undermine students' motivation to continue learning. Fortunately, the attribution of causality depends largely on the self-regulatory processes and beliefs from prior phases. For example, learners who plan to use a specific strategy during the forethought phase and who implement it during the performance phase are more likely to attribute failures to poor strategy rather than to low ability. Strategies are perceived as *controllable causes* of personal outcomes. Attributions to their use can protect learners against negative self-reactions and can foster an adaptive course of subsequent learning.

Self-reactions involve *self-satisfaction/affect* and *adaptive/defensive inferences*. These self-reflection phase reactions influence forethought goal setting, planning, and motivational beliefs regarding further efforts to learn.

Self-satisfaction produces an affective reaction ranging from elation to depression.

Research indicates learners' perceptions of satisfaction and positive affect can motivate them to continue their efforts to learn.

Adaptive/defensive inferences refer to the conclusions drawn about one's approach to learning, and the resulting behaviours and actions taken due to these conclusions. Learners who display some level of satisfaction and who attribute poor outcomes to strategy problems are more likely to make *adaptive inferences* and will alter their approach during subsequent efforts to learn. These satisfied learners display an increase in various sources of forethought motivation, including increased self-efficacy and valuing of the learning task. In addition, advantageous adaptive inferences have led to improved strategic planning and to beneficial shifts in goals when necessary. By contrast, students who are dissatisfied with their performance, and who attributed these outcomes to uncontrollable causes (e.g. low level of ability) will often resort to *defensive inferences*, such as helplessness, procrastination, task avoidance, cognitive disengagement, and apathy. This reduces learners' motivation to continue, and their lack of adaptation can greatly undermine the quality of subsequent efforts to learn.

Summary

Zimmerman endeavoured to be inclusive of the results of several researchers in the field of self-regulated learning. His cycle incorporates and categorizes the various cognitive processes, metacognitive processes and motivational feelings and beliefs that occur during self-regulation. He presents them as closely intertwined within and across the three phases: 1) *forethought*, 2) *performance*, and 3) *self-reflection*.

To summarize Zimmerman's research on self-regulated learning, *motivation* is the core element that fuels self-regulation. To set goals and engage in a self-regulatory cycle, learners

must be proactive. They begin with the *forethought phase*, setting manageable goals and tasks/steps that are backed by realistic beliefs and expectations. In the *performance phase*, these steps are guided by clearly thought-out strategies. The learners enter the *self-reflection phase* during which conclusions are drawn on whether or not the strategies were effective. The learners feel more in control of their own learning, building a sense of autonomy and self-efficacy. This inspires confidence in their learning skills and increases motivation, which encourages the learners to continue engaging in the self-regulatory cycle.

The comprehensive flow chart from the previous sections, which summarized Kabat-Zinn and Csikszentmihalyi's research as Mindfulness stages one and two, has been further expanded to include Zimmerman's cycle as part of the self-regulation section, and can be found on the following page. *Deliberate Practice*, a systematic procedure that has its roots in self-regulatory learning, will be the focus of the next chapter.

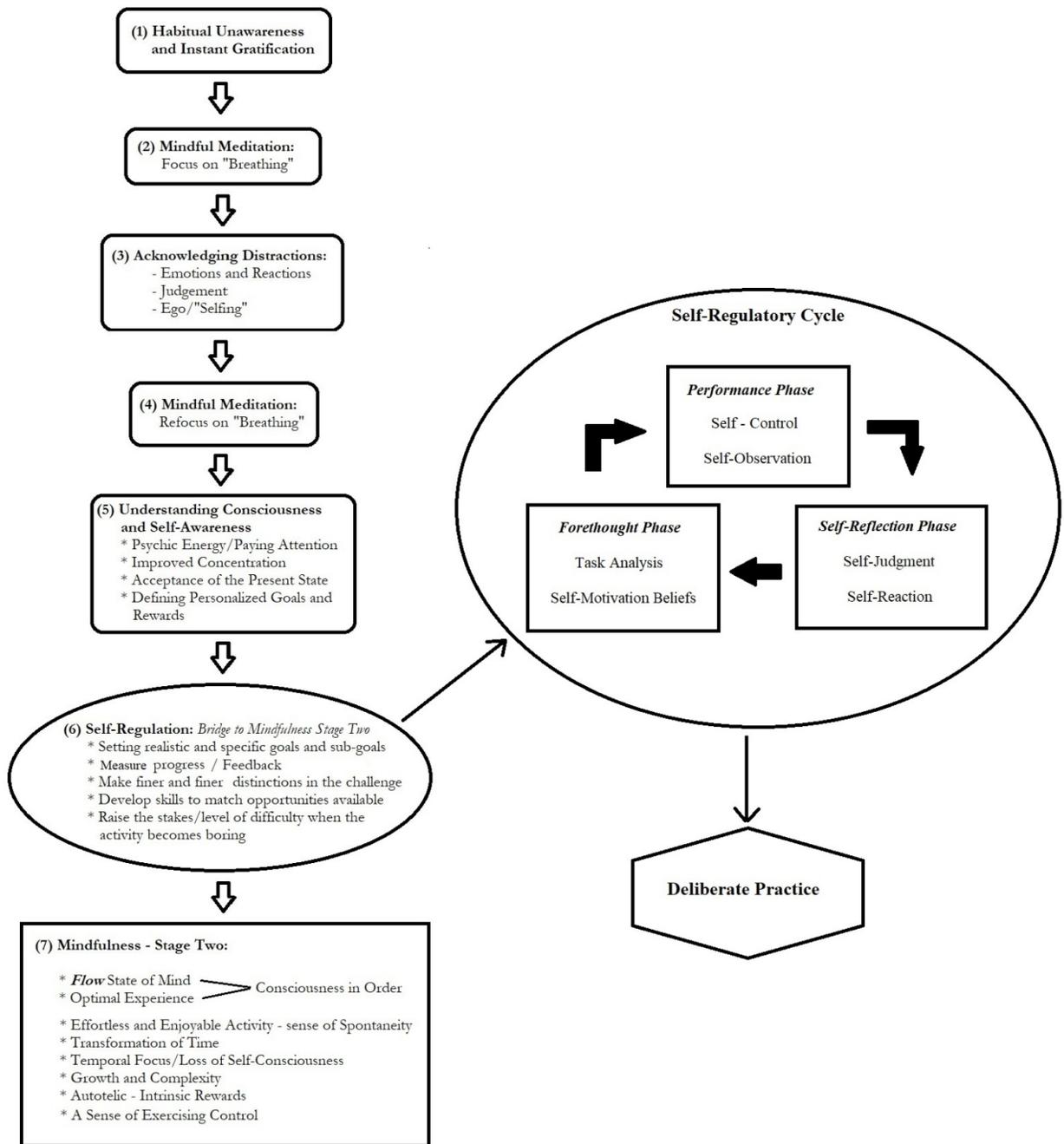


Figure 6: Comprehensive Flow Chart – Adding Self-Regulation (The Bridge)

Deliberate Practice – Self Regulation in Action

The Expert on Experts

Swedish psychologist, scholar and Professor K. Anders Ericsson, is recognized as the “expert on experts.” Internationally renowned for his research on the psychological nature of expertise and human performance, he devoted his career to understanding exactly how practice works to create new and expanded capabilities. Ericsson coined the term *deliberate practice*, and championed it as the most effective approach to acquiring and developing a skill. It is a process that has developed experts in various fields, and is continually utilized by experts to further enhance their skills.

In her book *Grit: the Power of Passion and Perseverance*,⁷¹ colleague and pioneering psychologist Angela Duckworth offers a concise breakdown of deliberate practice, which reflects the key concepts of self-regulation:

- 1) *Setting a stretch goal* – zeroing in on one aspect of the overall performance. The focus is on improving specific weaknesses, rather than repeating what can already be comfortably achieved. Experts go outside their *comfort zone*, intentionally seeking out challenges beyond their reach.
- 2) *Reaching the stretch goal* – with undivided attention, experts strive to reach their goal, often practicing/working alone. Working individually is a better predictor of how one develops.

⁷¹ Angela Duckworth, *Grit: The Power of Passion and Perseverance* (Toronto: HarperCollins Publishers Ltd, 2016), 121-123.

- 3) *Seeking feedback* – experts hungrily seek feedback as soon as possible. It is essential that feedback be actively and immediately processed. Experts are more interested in what they did wrong so they can find ways to fix it.

A *stretch goal* is an objective that is just slightly out of reach, placing a person outside of their comfort zone and in a position to strive for improvement. If one does not aim to identify areas of weakness and set specific goals to address them, there can be no improvement. A person can become stuck in what Ericsson calls the *usual* approach to practice, in which a person encounters the inevitable *plateau*.

The Usual Approach to Practice

To provide an example of the usual approach to practice, Ericsson quotes Steve Oare, a specialist in music education at Wichita State University. It involves an imaginary conversation between a music instructor and a young music student:⁷²

TEACHER: Your practice sheet says that you practice an hour a day, but your playing test was only a C. Can you explain why?

STUDENT: I don't know what happened! I could play the test last night!

TEACHER: How many times did you play it?

STUDENT: Ten or twenty.

TEACHER: How many times did you play it correctly?

STUDENT: Umm, I dunno...Once or twice...

TEACHER: Hmm...How did you practice it?

STUDENT: I dunno. I just played it.

Oare's example highlights a common pattern in human behaviour. A person begins practicing a new skill with genuine interest and motivation, absorbing instruction and improving at a steady rate. Eventually a certain level of skill is acquired and actions become automatic. At this point a *plateau* has been reached and improvement ceases. Most people are unaware of this

⁷² Anders Ericsson and Robert Pool, *Peak: Secrets from the New Science of Expertise* (New York: Houghton Mifflin Harcourt, 2007), 14.

phenomenon, believing that as long as one continues to practice in the usual way, improvement will surely follow. Many assume that someone who has been driving for twenty years would be a better driver than someone who has been driving for only five years. Research has shown that the more experienced driver is in fact worse, relying on automated abilities, and falling into habitual unawareness.⁷³ In time, this plateau and lack of improvement will become noticeable to the practicing student. The student could settle and accept the belief that his abilities are limited or become so discouraged and give up practicing the skill all together. The student in Oare's imaginary conversation had already reached that level of skill where his practice has become comfortable and automatic. The initial rapid improvement that captivated his attention when he first started lessons has stopped, resulting in the loss of interest and focus in his practicing. He is completely unaware of his actions and responds to his teacher's questions in a desultory manner.

Deliberate Practice – Breaking through the Plateau

According to Ericsson, engaging in the process of deliberate practice will help a person break through that plateau and the stagnation of skills. To reiterate, deliberate practice involves setting a stretch goal, reaching a stretch goal, and seeking feedback.

The following key elements are at the core of these deliberate practice steps – 1) paying attention, 2) specificity, 3) getting outside of one's comfort zone, and 4) trying something different.

Any reasonably complex skill will involve a variety of components, some of which you will be better at than others. Thus, when you reach a point at which you are having difficulty getting better, it will be just one or two of the components of that skill, not all of them, that are holding you back. To figure out which components, you need to find a way to push yourself a little harder than usual. This will often help you figure out where

⁷³ Ericsson, *Peak*, 12 – 13.

your sticking points are. If you're a tennis player, try playing a better opponent than you are used to; your weaknesses will probably become much more obvious.⁷⁴

If one desires improvement, one needs to pay attention to the task at hand. No work can be done if there is no focus. Once the mind is present with the task, a person can break down and analyze the multiple components that make up a complex skill. One should aim for *specificity* and single out the particular components of a skill that are preventing improvement. If the music student in Oare's example is a pianist, he could focus on the one or two musical bars in which he constantly makes mistakes, perhaps noticing that it was the pattern of fingering on his right hand that was causing him trouble. In order to find these trouble spots, a person needs to deliberately push himself outside of his *comfort zone* and face the unavoidable weaknesses that will present themselves. Oare's music student could attempt to play the piece at a faster tempo, and pay close attention to where his fingers start to falter.

The area outside one's comfort zone is where skill improvement and progress take place. Once weaknesses are identified, the music student will need to continue living outside his comfort zone by challenging himself to work on the weaker components of his skill. *Feedback*, suggestions and help from a trusted and experienced mentor are crucial, especially for novice students. A teacher who knows her student well can create a specific practice exercise, structured according to the student's needs and designed to challenge him. In doing this, she sets up an example that the student can emulate. As his skill level increases he can begin crafting effective training strategies of his own.

In the realm of athletics and sports, staying outside of one's comfort zone involves challenging the *homeostasis* of the body. Homeostasis refers to the tendency of a living system to act in a way that maintains its own stability. The human body maintains a steady temperature,

⁷⁴ Ericsson, *Peak*, 164.

blood pressure, heart rate, etc. Fluctuations do occur, but only temporarily, and the body fights to regain a state of balance. The body is equipped with various feedback mechanisms that act to maintain the status quo. When a person engages in physical exercise that is not too strenuous, the body's homeostatic mechanisms will not be challenged, and the exercise will do very little to prompt physical changes in the body. When the body is stressed to the point that homeostasis can no longer be maintained, the body responds with changes that are intended to re-establish homeostasis. A jogger's sustained aerobic exercise will lead to low levels of oxygen in the capillaries that supply the leg muscles. The body will respond by growing new capillaries in order to provide more oxygen to the muscle cells in the legs, in an effort to balance the body and return it to its comfort zone. A person can drive the body to change by harnessing its desire for homeostasis. Over time, the body will respond to the strain of working outside the comfort zone, developing more strength, endurance, and coordination. However, there is a catch: once these compensatory changes have occurred, the body will begin to settle and plateau yet again, albeit at a more advanced stage. For continued progress, one must constantly stay just outside one's comfort zone. This can also be accomplished by *trying something different* – varying the approaches to the development of a skill. Bodybuilders achieve this by changing the types of exercises in their regimen. They increase or decrease the weights they are lifting and change the number of repetitions. It is well understood in the field of weight-lifting that a builder must proactively vary her patterns in order to avoid getting stuck on a plateau. Yet one must remember that in everything there is balance. If a person should push too far outside her comfort zone, she risks injuring herself and setting herself back even further.⁷⁵

While the body's adaptability to physical challenges is well researched and documented, scientists are still making new discoveries about how the brain changes in response to mental

⁷⁵ Ericsson, *Peak*, 37 – 40.

challenges. One significant difference between the body and the brain is cellular division. While the body can continue cellular division into a much older age, once the brain reaches adulthood, most of its parts can no longer divide and form new brain cells, known as *neurons*. There are a few exceptions, particularly the hippocampus, which is linked to learning, emotions, and the formation of new memories. New research indicates that the hippocampus may be able to make new neurons throughout adulthood. However, other parts of the brain respond to mental challenges in a different way. Rather than develop new neurons, the brain rewires neural networks (the connections between neurons) in various ways. These neural networks are responsible for all brain functions, including the formation of thoughts, memories, controlling movement, interpreting sensory signals, etc. The connections can be strengthened or weakened, and new connections can be made to replace old ones. There can also be an increase in the amount of *myelin* – the insulating sheath that forms around nerve cells, allowing nerve signals to travel more quickly. Greater mental challenges cause more dramatic changes in the brain. Recent studies have shown that learning a new skill is much more effective at triggering structural changes than simply practicing a skill that one has already learned. Just as pushing the body too far outside its comfort zone can cause injury, pushing the mind too far can lead to burnout and ineffective learning.⁷⁶

All of the experts that Ericsson encountered in his research attained their high level of abilities due to consistent deliberate practice. They constantly pushed themselves outside of their comfort zone (healthily and realistically), in order to foster steady improvement in whatever skill set they were intent on developing. Ultimately, all skills are achieved through a complex coordination between the body and the brain. These coordinative efforts are guided by *mental representations*.

⁷⁶ Ericsson, *Peak*, 40 – 41.

Mental Representations

If the *Mona Lisa* were to come up in a conversation, many people will immediately “see” an image of the painting in their minds. That image is a *mental representation* of the *Mona Lisa*. Each person’s image will be different, some more detailed and accurate than others, but most people will grasp immediately which famous painting they are talking about. Grammatical sentence structure is also an example of mental representations. If someone were asked to recall a random assortment of words verbatim - *was, smelled, front, that, his, the, peanuts, he, good, hunger, eating, barely, woman, of, so, in, could, that, him, contain* – the average person will mostly likely remember only the first six of those words. However, if the same words were rearranged into a clear sentence – *The woman in front of him was eating peanuts that smelled so good he could barely contain his hunger* – people will be able to remember most of the words, with even some people remembering all of the words in perfect order. The second arrangement of words is ordered in a recognizable sentence structure, a pre-existing mental representation. The word order carries meaning, allowing a person to remember most if not all of the words.⁷⁷

Ericsson defines mental representations as:

Pre-existing patterns of information – facts, images, rules, relationships, and so on – that are held in long-term memory and that can be used to respond quickly and effectively in certain types of situations. The thing all mental representations have in common is that they make it possible to process large amounts of information quickly, despite the limitations of short-term memory. Indeed, one could define a mental representation as a conceptual structure designed to sidestep the usual restrictions that short-term memory places on mental processing.⁷⁸

Experts are set apart from novices due to the years of practice experience that have changed the neural circuitry in their brains. This allows them to produce highly specialized

⁷⁷ Ericsson, *Peak*, 56-59.

⁷⁸ *Ibid.*, 60.

mental representations, which make possible the excellent memory, pattern recognition, problem solving, and other kinds of advanced abilities that are necessary in order to excel in their particular specialities.⁷⁹

Serious chess players develop their abilities through recognizing and remembering *meaningful* patterns. They spend countless hours studying games played by the masters: analyzing a position in depth, attempting to predict the next move, and if a mistake was made, going back and figuring out what was missed. Research has shown that it is the amount of time spent analyzing patterns, and not the time spent playing chess with others, that is the most important predictor of a chess player's ability. It takes years of practice to recognize and establish these patterns of mental representations – the positions of the chess pieces and the interactions among them – storing them in long-term memory. The expert chess player can recognize these patterns, also known as *chunks*, at a glance. It is estimated that a master chess player has accumulated approximately fifty thousand of these chunks and can examine these various patterns interacting with each other on the chess board.⁸⁰

This is essentially the trademark of an expert – the ability to see meaningful patterns that would seem random and confusing to people who are new to or unfamiliar with that speciality. A 2014 study by German researchers investigated indoor rock climbing, which was designed to mimic and serve as training for outdoor rock climbing. It involves climbing a vertical wall featuring various handholds. These holds require different kinds of grips or hand positions and using the wrong grip on a handhold will likely result in falling. Researchers noted that while inexperienced climbers had to take time to consciously figure out the appropriate grip for each hold, experienced climbers could automatically identify each hold according to the type of grip it

⁷⁹ Ericsson, *Peak*, 11.

⁸⁰ *Ibid*, 56 – 57.

required. With years of practice they had developed strong mental representations of the different holds. When these experienced climbers saw a particular hold, their brains would send a signal to their hands, and they would automatically form the corresponding grip. Additionally, these expert climbers had the ability to look over an entire wall and visualize the path they plan to take, seeing themselves moving from hold to hold. Better mental representations allow a person to plan more effectively and can lead to better performance.⁸¹

A cyclic process occurs. Honing one's skill improves mental representation, and mental representation helps hone the skill. In figure skating, it's difficult to have a clear mental representation of what a double axel feels like until one has performed it. Likewise, it is difficult to perform a clean double axel without a good mental representation of one. The skater will need to work up to the challenging jump bit by bit, assembling the mental representations as she goes.

It's like a staircase that you climb as you build it. Each step of your ascent puts you in a position to build the next step. Then you build that step, and you're in a position to build the next one. And so on. Your existing mental representations guide your performance and allow you to both monitor and judge that performance. As you push yourself to do something new – to develop a new skill or sharpen an old one – you are also expanding and sharpening your mental representations, which will in turn make it possible for you to do more than you could before.⁸²

The more a person studies a subject, the more detailed a person's mental representations become, getting faster and better at assimilating new information. Some of the best evidence comes from the field of musical performance, with researchers examining what differentiates expert musicians from beginners and intermediate ones. When practicing a new piece of music, novice musicians generally lack a clear mental representation of what the music will sound like. Advanced musicians can look at a musical score and know what it will sound like before playing

⁸¹ Ericsson, *Peak*, 65, 72.

⁸² *Ibid*, 82 – 83.

it. These experts use their detailed representation of the music as a guide to their practice, and ultimately the performance of the piece. They use their mental representations to provide their own feedback, monitoring and evaluating their performance. When necessary, they will modify their mental representations in order to make them more effective. Beginners and intermediate students will have more basic mental representations, enough to notice that they have played an incorrect note, yet they still rely on feedback from trusted mentors to help them identify the more subtle mistakes and weaknesses.⁸³

Roger Chaffin, a psychologist at the University of Connecticut, worked closely with Gabriel Imreh, an internationally known pianist based in New Jersey, to provide a detailed depiction of how an expert musician uses mental representations. He observed her as she learnt a new piece of music, having her voice her thought processes out loud as she determined how she would play the piece. Ericsson calls this psychological research tool the “think-aloud protocol,” designed with the intention of studying the mental processes of experts. Imreh first played through the piece, establishing what she called an “artistic image” – a representation of what the piece should sound like when she performed it. She then proceeded to figure out how to perform the piece so that it would match her artistic image – decided what fingering to use, addressed difficult passages, determined landmarks or anchor points in the music, etc. She created a mental blueprint, a map that would help guide her playing. Imreh’s mental representation helped her to memorize the music to the point where her performance could be done almost automatically. At the same time, her mental map also allowed her to maintain a certain amount of spontaneity in her performance. While her fingers performed well-rehearsed motions, she always knew where she was in the music through the various landmarks she had already previously identified. Some of these landmarks would signal that a change in fingering was approaching. Others were what

⁸³ Ericsson, *Peak*, 77.

Chaffin called “expressive landmarks,” indicating sections where she could vary her playing to capture a particular emotion, depending on how she felt and how the audience was responding.⁸⁴

To reiterate, what makes expert performers stand out are the quality and quantity of their mental representations. Through years of deliberate practice and performance experience, they develop highly complex and sophisticated representations of the various situations they are likely to encounter in their fields. These representations allow them to respond more quickly and effectively in each situation.⁸⁵ Ericsson states:

The main purpose of deliberate practice is to develop effective mental representations. Mental representations, in turn, play a key role in deliberate practice. The key change that occurs in our adaptable brains in response to deliberate practice is the development of better mental representations, which in turn open up new possibilities for improved performance.⁸⁶

A significant aspect about mental representations is that they are *domain specific*. They apply only to the skill for which they are developed. A chess player’s mental representations will give her no added advantage over others in tests involving general visual-spatial abilities. There is no such thing as developing a general skill. A person doesn’t train to become a general athlete. He specifically trains to become a gymnast, a sprinter, or a swimmer. There are certainly some individuals who seemed skilled in many different areas, but they accomplish this by investing time and training in each of those different areas.⁸⁷

⁸⁴ Ericsson, *Peak*, 80 – 81.

⁸⁵ *Ibid*, 61 – 62.

⁸⁶ *Ibid*, 75.

⁸⁷ *Ibid*, 60.

Knowledge versus Skill

Ericsson points out that traditionally there has been an emphasis on acquiring knowledge rather than skill. The traditional approach has been to provide information with the expectation that students will automatically understand how to apply that knowledge. The deliberate practice approach trains the learner to apply that acquired knowledge through the performance of hands-on activities, helping them develop the required skills for the job or discipline, and at the same time, solidify conceptual knowledge.⁸⁸

In the arts and in sports, it is understood that the development and performance of skills are essential to excelling in those fields. In other fields such as the medical and business worlds, there is that tendency to focus on knowledge at the expense of skills. Tradition and convenience are the main reasons for this lack of emphasis on skill training. It is much easier to present knowledge to a large group of people than it is to set up conditions that allow individuals to develop skills through hands-on practice. The situation is similar in professional schools including law school. The general argument has been that once knowledge has been acquired, skills are relatively easy to master. This notion is linked to the assumption that simply accumulating more experience will lead to better performance. Research has shown that when college students enter the work force, they struggle through a transition period and require a lot of time to develop the skills necessary for their job. There should be a focus on how to improve the relevant skills, not just on how to teach the relevant knowledge.⁸⁹

⁸⁸ Ericsson, *Peak*, 131.

⁸⁹ *Ibid*, 136 – 137.

Adaptive Thinking – Creativity and Trial and Error

In a series of recent studies done by medical researchers in Canada, some of the best surgeons were observed while performing challenging operations. After years of experience, these surgeons have developed effective mental representations of their surgical processes, allowing them to plan, perform, and monitor the progress of the operation. Psychologists have developed various ways to study their mental representations, which includes observing the surgeons in action and interviewing them before and after the operation, asking questions about their thought processes during the surgery. Researchers strive to identify characteristics of mental representations that could be linked to greater success in surgeries. Analysis of their mental processes reveals that these doctors have prepared meticulous surgical plans yet are always ready for the unexpected. They closely monitor the progress of the operation and detect problems by noticing when something about the surgery doesn't line up with the way they had visualized the surgery in their preoperative plan. Once they notice a disparity, they will come up with a list of alternative approaches and adapt accordingly. This ability to recognize unexpected situations, quickly consider various possible responses, and then decide on the most appropriate action is called *adaptive thinking*. It involves creativity and the willingness to undergo the process of trial and error in order to restructure mental representations and develop new strategies and solutions on the spot. Experts in any field are more skilled in adaptive thinking, having encountered more unexpected occurrences, and gained experience through dealing with them. As a result, they will have more detailed and effective mental representations as well as a higher quantity of them.⁹⁰

⁹⁰ Ericsson, *Peak*, 142 – 143.

There are No Shortcuts

It is an enduring and deep-seated belief that *natural talent* plays a major role in determining ability. Some people are born with natural endowments making it easier for them to become outstanding athletes or chess players. While they may still need a certain amount of practice to develop their skills, it is assumed that they need far less practice than other people who are supposedly not as talented, and that they will reach far greater heights in their careers.

Ericsson made it a hobby to investigate the stories of prodigies. He reports that he never found a convincing case that proved someone could develop extraordinary abilities without intense, extended practice:

My basic approach to understanding prodigies is the same as it is for understanding any expert performer. I ask two simple questions: What is the exact nature of the ability? And what sorts of training made it possible? In thirty years of looking, I have never found an ability that could not be explained by answering these two questions... People want to believe that there is magic in life, that not everything has to abide by the staid, boring rules of the real world. And what could be more magical than being born with some incredible ability that doesn't require hard work or discipline to develop? ⁹¹

When one observes a beginner learning at a faster rate than others, it is natural to assume that this person has an innate talent and will continue to improve at the same rate and with less effort. There will always be differences in how quickly people pick up a particular skill. Some people will have an easier time playing a musical instrument, while others are much more adept at tennis. However, there is no genetic variant that is linked to innate talent, or that can predict superior performance in a particular area. Ericsson's analysis of prodigies reveals that their prodigious achievements are always backed by hours and years of dedicated practice that the public has not witnessed. These prodigies did not sit idly with their natural talent developing their skills for them. They sacrificed other pleasures and activities to invest time and effort in the

⁹¹ Ericsson, *Peak*, 211-216.

development of their skills so that they could produce a polished performance that would impress an audience.⁹²

Dispelling Myths

The process of deliberate practice dispels *three prevailing myths*⁹³ that have ruled people's perspective for years.

The first myth is the belief that one's abilities are limited by genetically prescribed characteristics. This belief often manifests itself in negative thoughts and statements that discourage a person from even trying out a new skill. Deliberate practice can help people improve in just about any area they choose to invest time in and focus on. Mindset does matter, and negative thoughts should be acknowledged, re-evaluated, and revised.

The second myth implies that if one practices a skill set the same way for long enough, one is bound to improve. Doing the same thing over and over again will, in fact, do the opposite, and will cause stagnation and gradual decline. Deliberate practice encourages a variety of practicing approaches to break through the plateau.

The third myth suggests that all it takes to improve is effort. If one tries hard enough improvement will naturally follow. It is necessary to push oneself just outside one's comfort zone in order to challenge the body and mind to improve. However, one shouldn't mindlessly push to the point of over-exertion and possibly hurting oneself. Effort must be combined with a reflective, analytical, and creative mindset. One must have a willingness to discover more efficient and effective strategies and mental representations, often through the process of trial and error.

⁹² Ericsson, *Peak*, 236-237.

⁹³ *Ibid*, 121-122.

Summary

Ericsson's process of deliberate practice is derived from the training methods and approaches of experts. Broken down into clear steps, this process is accessible to anyone who wishes to improve their skills in a specific discipline.

Step one involves *setting a stretch goal*, focusing on the improvement of weaker aspects of a person's performance/skill set. The stretch goal must be challenging, set just outside of one's comfort zone in order to instigate change in the body and brain, and to avoid getting stuck on a plateau.

Step two is about *reaching a stretch goal*, which can only be accomplished if a person pays full attention and is completely focused on the goal. In order to constantly stay outside of one's comfort zone and to avoid stagnation, one can vary the practice regimen by trying different methods and approaches.

Step three involves *seeking feedback* from trusted mentors, which is especially important when an individual is at the beginning stage of learning a new skill. Through the teacher's suggestions, and from one's own practice experience, a person will become more effective at monitoring self progress and can utilize personal feedback to adjust methods of training.

Deliberate practice leads to positive developments in the functioning capabilities of a person, reflected in structural changes in the body and the brain. Experts in any field will have highly detailed *mental representations*, which are meaningful patterns held in long-term memory. These patterns help guide the development and performance of a skill. Better mental representations allow a person to plan more effectively, resulting in improved performance. A cycle occurs, in that honing one's skill improves mental representation, and improved mental representation helps hone the skill.

While informed by theoretical knowledge, deliberate practice focuses on the hands-on performance of a skill. Practicing the actual “doing” of a specific task enhances the learning experience and can bring the skill to a higher level.

After reaching a level of expertise, one will have acquired a high quantity of mental representations, which contributes to *adaptive thinking*. A person who has more experience performing a task, and whose skills have been tested in various scenarios, will be able to respond more quickly in unexpected situations. They can adapt their thinking according to the situation, create new solutions and craft new strategies, which often involves trial-and-error.

Ericsson’s points on deliberate practice have been added to the comprehensive flow chart on the following page. The complete diagram offers a detailed overview of how the concepts of mindfulness, self-regulation, and deliberate practice all tie together.

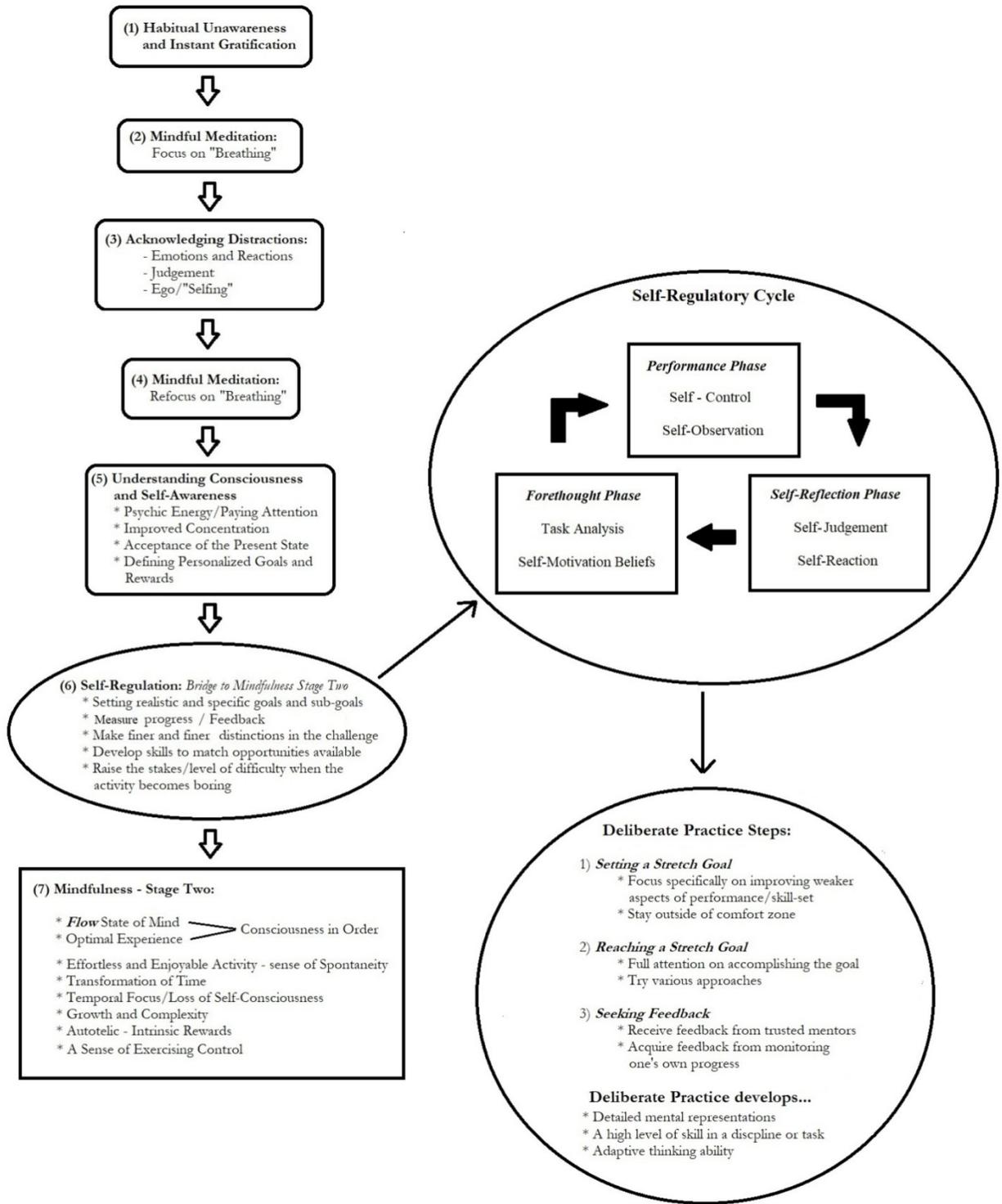


Figure 7: Comprehensive Flow Chart – Adding Deliberate Practice

Applications to Vocal Performance and Pedagogy

With mindfulness, self-regulation and deliberate practice now clearly defined, this portion of the literature review will explore how these concepts have been applied, so far, to the fields of vocal performance and pedagogy.

Mindfulness in the Voice Studio

Current voice performance/pedagogy researchers are influenced by Jon Kabat-Zinn, frequently citing his works in their writing.

The *Journal of Singing* published an article written by freelance voice teacher and composer David Sisco entitled *Bringing a Different Kind of Research into the Studio*.⁹⁴ Sourcing Kabat-Zinn's work in his article, Sisco expresses the importance of practicing mindfulness in vocal training, particularly from the teacher's standpoint:

Mindfulness stems from Buddhist meditation traditions and has been scientifically proven to promote changes in brain structure and improvements in cognitive processing. The practice of mindfulness has been most highly referenced as a tool for stress reduction, but it has many other positive results for the teacher and, by extension, the student.⁹⁵

In support of the practice of mindfulness, Sisco incorporates other sources, including information from a compilation of research essays entitled *Impacting Teaching and Learning: Contemplative Practices, Pedagogy, and Research in Education*,⁹⁶ which suggests a number of additional benefits:⁹⁷

⁹⁴ David Sisco, "Bringing a Different Kind of Research into the Studio," *Journal of Singing* 77, no. 1 (September/October 2020): 19-24.

⁹⁵ *Ibid.*, 21.

⁹⁶ Evan E. Moss et al., Matthew J. Hirschberg, Lisa Flook, and M. Elizabeth Graue, "Cultivating Reflective Teaching Practice Through Mindfulness," in *Impacting Teaching and Learning: Contemplative Practices*,

- *Enhances the ability to foster supportive relationships with students.*
- *Minimizes the transition from self to other (e.g., shifting concerns about the self, such as a focus on self-adequacy, to concerns about the student).*
- *Affords an opportunity to develop reflective teaching (e.g., mindful reflection may allow a teacher to notice the early somatic, cognitive, and emotional indicators of frustration and impatience).*

Sisco then suggests the following ways in which teachers can practice mindfulness to the benefit of the student:⁹⁸

- 1) *Set aside ten minutes to meditate before the beginning of each teaching day*, using guided (i.e., YouTube videos/apps) or silent meditation to get centered and open to receiving what the student has to share.
- 2) *Incorporate different mindfulness exercises into the beginning of each lesson* that will help ground the student and also gives the teacher an opportunity to renew her presence. (e.g., Exploring the five senses – how do your clothes feel on your skin? What do you hear around you?).
- 3) *Name things that stand in the way of your being present for the student.* Naming emotions in the presence of the student without over-sharing. Something as simple as “It’s been a challenging day, but I’m glad you’re here and I’m ready to work,” can help a teacher remain present for his students and to model healthy processing.

In 2018, Elena Blyskal, electronically published her dissertation paper entitled *Mindfulness Practice in the Collegiate Voice Studio: A Case Study*.⁹⁹ Kabat-Zinn’s work proved to be an underpinning resource for her research. Her problem statement highlighted that few institutions offered courses in mindfulness or performance skills to support the health and

Pedagogy, and Research in Education, ed. Elizabeth Hope Dorman et al. (Maryland: Rowman & Littlefield, 2018), 30.

⁹⁷ Sisco, *Different Kind of Research*, 21-22.

⁹⁸ *Ibid.*, 20.

⁹⁹ Elena Blyskal, "Mindfulness Practice in the Collegiate Voice Studio: A Case Study" (PhD diss., University of Miami, 2018), Open Access Dissertations, accessed October 13, 2020, https://scholarlyrepository.miami.edu/oa_dissertations/2043.

psychological well-beings of music majors, whereas numerous universities regularly employ mental health professionals for their athletes:

Performance anxiety, depression, self-doubt and attention disorders are critical yet common issues that can be detrimental to musicians' performances and careers. Students may then seek out mindfulness as a solution for a now-established problem when mindfulness could have been a regular practice from the beginning of the student's study. As teachers who see their students on a one-on-one basis, private studio instructors have a unique opportunity to bridge this in their studios. Voice teachers and students may find mindfulness particularly beneficial, considering the physical awareness and psychological resilience needed to sing successfully.¹⁰⁰

Blyskal's study sought to investigate the effectiveness of formal mindfulness practice on a student's vocal technique and level of anxiety in the collegiate voice studio. She addressed the following research questions: 1) Can practicing mindfulness positively enhance the experiences of learning vocal technique? 2) Can practicing mindfulness in the private studio help reduce the general anxiety of university music students.

Three student participants responded to her advertisement for eight free voice lessons. All the students were enrolled as music majors at the Frost School of Music (University of Miami). The students were between the ages of 19 and 23 and were enrolled in music composition and music education. One participant had taken voice lessons before and studied voice as a principal instrument. Another student had some experience with solo singing but had never taken voice lessons. The third student had experience with choral singing, but had also never taken formal voice lessons outside of a few weeks at a summer music camp. The participants were provided with voice lessons, once a week that followed the traditional structure of warm-ups, vocalises, and repertoire. Each lesson began with a ten-minute formal mindfulness practice – a meditation exercise. Blyskal utilized meditation scripts excerpted and adapted from Mindfulness based

¹⁰⁰ Blyskal, *Mindfulness Practice*, 4-5.

courses, or that were available for public streaming and freely downloaded. Mindfulness homework was assigned along with the students' voice practice – a daily ten-minute practice of breath awareness or a body scan¹⁰¹, a brief mindful exercise (e.g., being fully aware of the task of brushing one's teeth) and writing in a journal. They were encouraged to use their journals at least once a week to record any thoughts, ideas, sensations, or breakthroughs that occurred during voice practice. At the end of the study, the participants were individually interviewed, not by the researcher herself, but by another Frost School of Music student, in order to maintain an unbiased perspective in the collecting of statements and to ensure candid responses from the participants.

Blyskal's research project seemed very promising and it concluded with some positive results, though obvious limitations had to be acknowledged. All three participants unanimously reported an increase in focus and physical awareness of their bodies while singing, as well as a decrease in anxiety level. However, the participants mainly discussed their improved focus and stress management, not vocal technique. One student remarked that he could see the correlation between some mindfulness practices and learning voice (e.g., breath awareness and body scan), but he was less clear about how other mindful practices were linked to singing (e.g., labelling thoughts and feelings). All three participants started the project with eagerness, but their commitment waned towards the end as other school activities started taking priority. Mindfulness homework assignments were inconsistently completed. Only one participant appreciated the journaling exercise. All three students felt that mindfulness exercises were

¹⁰¹ **Body Scan:** Paying attention to parts of the body and bodily sensations in a gradual sequence from feet to head.

Body Scan Meditation, *Very Well Mind*, accessed October 13, 2020, <https://www.verywellmind.com/body-scan-meditation-why-and-how-3144782#:~:text=Body%20scanning%20involves%20paying%20attention,%2C%20tension%2C%20or%20general%20discomfort.>

helpful, and that they could utilize the skills they've learned from the research project, "when needed." Blyskal stated:

It was the researcher's intent that with eight weeks of practice inside and outside of voice lessons, the students would draw their own connections between mindfulness and studying voice. However, a more structured teaching of mindfulness may have been needed for students to make these connections.¹⁰²

The choice of an external interviewer was thought to be beneficial in maintaining an impartial perspective, and in acquiring sincere responses. However, the interviewer did not have the same depth of knowledge as the researcher; therefore there may have been missed opportunities to extract a more detailed response from the participants. Blyskal acknowledged the set back of the choice of interviewer, and pointed out several potential reasons for the students' weak co-relation between mindfulness and vocal technique. Given that one of the objectives was to examine the effect of mindfulness on learning vocal technique, she believed that more specific close-ended questions regarding vocal technique would have been more effective, as opposed to the open-ended questions which allowed the participants to answer vaguely about their experiences.

A significant factor that should be pointed out was that none of the participants were majoring in music performance, and only one of them identified as a singer (i.e., voice was principle instrument). Since the project was specifically geared towards singers, it would only seem logical that actual voice performance majors should be involved in the project, which would likely have affected the outcome of the research. It was subtly implied by Blyskal that there were some challenges in accessing the necessary singer participants.

Blyskal's project was successful in implementing *Mindfulness Meditation* (defined as Stage One Mindfulness by this paper) into the participants' practice procedure. However, a

¹⁰² Blyskal, *Mindfulness Practice*, 56.

“more structured teaching of mindfulness,” as Blyskal stated herself, would be needed in order for students to draw the connections between mindfulness practice and vocal technique. This could be accomplished through the processes of self-regulation and deliberate practice.

Realistic Goal Setting for Singers

*Power Performance for Singers: Transcending the Barriers*¹⁰³ is a comprehensive guide that offers classical singers tools and strategies rooted in the concepts of mindfulness and self-regulation. This book was a collaborative effort between the late Shirlee Emmons, who was a prominent voice teacher, based in New York, and Alma Thomas, a performance consultant and accredited sports psychologist. They touch on several key topics including the importance of attention and self-awareness, mindfulness meditation for developing focus and concentration, and changing negative to positive self-talk. They champion the practice of setting realistic and specific goals and sub-goals, claiming that doing so will:

- *Direct attention to the important elements of the skill itself* - in setting specific goals, one isolates particular vocal aspects that need upgrading (e.g., coloratura runs)
- *Mobilize efforts/strengthening persistence* – on some days, one might find it difficult to gather energy to practice, or may feel overwhelmed by having to learn a large amount of music in a short amount of time. Dividing up the musical piece into smaller chunks can make the task more specific, and more manageable. Charting one’s progress while setting and accomplishing these goals provides feedback of forward moving developments, which increases motivation and persistence.
- *Encourage the development of new learning strategies* - while responding to the effort to achieve a goal, one might learn and develop new ways of dealing with a problem. This adds to the skill set of the learner and continues to increase confidence and motivation.¹⁰⁴

¹⁰³ Shirlee Emmons and Alma Thomas. *Power Performance for Singers: Transcending the Barriers* (New York: Oxford University Press, 1998).

¹⁰⁴ Emmons and Thomas, *Power Performance*, 75-76.

Emmons and Thomas differentiate between subjective goals and objective goals. An example of a subjective goal is choosing to enjoy oneself and to have fun while singing. An objective goal gives one a very clear and specific target to aim for. A singer could set the goal of memorizing just the first stanza of a song that has multiple verses, and plan to accomplish that goal through specific approaches – speaking the text, mental review, listening back to a recording, etc.

There are two kinds of objective goals – *outcome* and *performance goals*, which could be linked to the extrinsic and intrinsic motivation and rewards outlined by Zimmerman, and the personalized goals and rewards brought up by Csikszentmihalyi. Outcome goals are focused on extrinsic results, such as being offered a particular role or winning a competition. A singer must accept that sometimes these outcome goals are not met due to forces outside of one's control. Performance goals, however, remain firmly within a singer's control, focusing one's attention on achieving certain standards or performance objectives, which can be compared to past performances for feedback. A singer could set the performance goal of maintaining his focus on the text/lyrics as he sings his piece from beginning to end in an audition setting. If he manages to accomplish this performance goal, he will gain confidence in having that small achievement of increased concentration for himself, regardless of the outcome of the audition.¹⁰⁵

It is imperative for a singer to have a realistic sense of her abilities in order to set manageable goals, and to know how far to push outside of her comfort zone when striving to improve performance. The process of clear goal setting and the resulting cumulative achievements will give the singer a sense of empowerment and autonomy over the development of her own voice. This is crucial since there are many aspects of the vocal career which are

¹⁰⁵ Emmons and Thomas, *Power Performance*, 78-79.

outside of the singer's control. Any person will be set off balance if the focus lies too heavily on the accomplishment of outcome goals.

Goal setting and planning are important not only because they define your performance objectives but also because they develop and reaffirm your sense of mission, vision, purpose, and direction. If you can learn to set goals that relate to your own priorities in performance, then you can actually increase your commitment to achieving them...it is always best to focus your attention on and put your energy into those specific aspects of performance that are potentially within your control, such as your singing skills, your preparation (physical, technical, mental), your execution, and your performance routines, the best you can do in that moment of time or on that particular day. Often, performance issues such as motivation, drive, ambition, persistence, dedication, and willpower become critical only when the singer has neither set the goals appropriately nor fully integrated them into a program of priorities.¹⁰⁶

Feedback

Emmons and Thomas' book provides a significant number of resources for singers in the form of exercise sheets, mini surveys and questionnaires. Singers can utilize these tools to self-reflect and gain feedback on the progress of their vocal development. Portions of the survey for this research project were adapted and built upon some of the exercises suggested in this book.

An example exercise to help review one's performance is to make lists of what was good and bad about the performance. The singer can do this by himself or with the guidance and additional feedback of a mentor. The lists can include any specific detail in addition to actual singing – performance clothes, manner of walking on stage, communication with the audition panel, the pieces performed, one's relationship with singing colleagues, etc. The singer then reads the negative list out loud and reflects on the issues that can be improved upon in future performances. He is encouraged to write down his thoughts, to help specify and clarify these issues. Subsequently, the singer should throw away the "bad list" as a cathartic gesture, knowing

¹⁰⁶ Emmons and Thomas. *Power Performance*, 79.

he has learnt from his mistakes and will address these issues in the future. Following this, the singer should take the time to read the “good list.” He should strive to remember all the positive feelings associated with successful parts of the performance:

If you can, you should try to create an image of yourself doing this performance, using the things you have written on the good list. Keep this list and continue to read it at regular intervals to remind yourself of the performance’s good points. Work hard at focusing on the positive elements of that performance; then integrate them into your next vocal practice session and performance. Continue to work *to your strengths*.¹⁰⁷

In general, Emmons and Thomas recommend that singers keep a journal to record details on practice sessions and performances. These details can include a variety of things, ranging from descriptions of an enjoyable performance experience to a list of stress-inducing things that happened before an audition. It should also include reflections on learning processes – methods and strategies that were utilized, or the lack thereof.¹⁰⁸

The Mind – Body Connection

At the core of mindfulness and self-regulation is the link between the mind and the body. Csikszentmihalyi placed emphasis on the importance of having one’s *consciousness in order*. One must develop the ability to direct the course of specific conscious events (e.g., thoughts, sensations, feelings, etc.) through one’s clear intentions. This optimizes and enhances the mind-body relationship, increasing the chance of entering the *flow* state. The body responds more healthily to the guidance of a clear and organized mind, and in turn delivers information – feedback - for the mind to process, absorb and utilize in its continued organization. Emmons and Thomas describe the application of this concept to the training of classical singing:

¹⁰⁷ Emmons and Thomas, *Power Performance*, 107-108.

¹⁰⁸ *Ibid.*, 16.

When you practice your vocal skills, you are training more than your muscles. The repetition of your vocal skills sends a constant stream of signals via the nervous system to your brain, familiarizing it with the movements... This kind of conversation between the brain, the nervous system, and the body is continuous. The brain makes the decision then sends the message via the nervous system, and the muscles react. (Action follows thought!) All your training and repetition allows you to “parcel” the information appropriately so that the nervous system and body can take over. This way you do not have to think about how to be vocally correct *all* the time... It becomes necessary, then, to change *only the things that you do not need or those that do not work*.¹⁰⁹

Once the basics of vocal technique are established and have become habitual, then vocal training shifts to the tasks of maintenance and refinement. A core aspect of self-regulation and deliberate practice is being able to zero in on the specific elements of the technique that require improvement. From there, the singer can explore and develop approaches and strategies that can help the advancement of those specific technical elements.

Applying Motor Learning Theory to Voice Training

Lynn Holding is a leader in the dynamic field of contemporary voice science (vocology). Her published works feature current research in the cognitive, neuroscience and social sciences as they relate to music teaching, learning and performance. Throughout her research, Holding highlights singing as a motor skill – a function which involves the precise movement of muscles with the intent to perform a specific act. It requires the ability to feel or sense what one’s muscles are doing as they perform the act.¹¹⁰ Learning to sing is so similar to many other athletic pursuits that the term *vocal athlete* is now common parlance in the profession of voice performance and pedagogy.

¹⁰⁹ Emmons and Thomas, *Power Performance*, 67.

¹¹⁰ “What are Motor Skills,” EduClime, accessed October 15, 2020, <https://www.educlime.com/wharemosk.html#:~:text=A%20motor%20skill%20is%20a,as%20they%20perform%20the%20act>.

Helding brings up the notion of *desirable difficulties*, a term coined by psychologist R.A. Bjork. Desirable difficulties are challenging instructional tasks that push one just outside of one's comfort zone, sparking the impetus for learning:

Research into the biochemistry of the brain reveals that the more difficult a task is, the more "neuronal firing" from our brains is required; in essence, we must dig deeper for more complicated tasks. Repeated firing of the neurons from this deeper place, or baseline, creates a neural pathway which becomes stronger each time it is activated. This strength is basically equivalent to memory and thus, learning. Teachers of any subject activate students' neuronal firing every time they do their job, which essentially involves throwing a challenge in the student's path, on the assumption that the student will meet the challenge, and thus, learn...Based on the interrelationship between brain wiring and learning, it appears that benevolently constructed obstacles must form the foundation of any viable teaching method, especially if the goal is true learning and not simply improved performance in the short term.¹¹¹

At the beginning of training, voice teachers have the crucial job of setting desirable difficulties that challenge and push students just slightly beyond their level of ability, to induce the firing of the brain's neurons and instigate learning. As students grow in their abilities and gain experience in performance, they must also be guided to cultivate self-awareness so that they may begin to set up those desirable difficulties for themselves. This allows for the continuation of in-depth mindful learning and the improvement and enhancement of vocal technique.

Functional Vocal Training and the Mental Concept

Cornelius Reid was a singer and vocal pedagogue who developed his own school of functional vocal training based on the Italian *bel canto* (beautiful singing) methods, combined with insights from the more modern fields of physiology, acoustics, and psychology.

¹¹¹ Lynn Helding, "Voice Science and Vocal Art, Part Two: Motor Learning Theory," *Journal of Singing* 64, no. 4 (March/April 2008): 420 - 421.

At the root of Reid's pedagogical principles is the belief that the human body is naturally rational, and would function efficiently if it weren't for the interfering tensions placed upon it by human beings themselves. As a person develops and grows into adulthood, he develops a *mental concept* of the self, which includes particular vocal sounds that he identifies as his own.

Thus by the time vocal study is begun, the student recognizes and accepts certain tonal qualities as being peculiarly his own; the sounds associated with the coordinative response with which he has lived so long a time becomes fixed in his mind as "his quality." What he only vaguely realizes, however, is the extent to which his conceptual image has to be altered in order to meet in agreement with nature's laws. To the degree to which he is capable of adapting to new conceptual images, to that degree will radical technical improvement be made.¹¹²

Discovering efficient vocal technique becomes a challenging task, especially when one so personally identifies with a particular vocal quality and the sensations of the habitual physical coordination that accompany it. The mental concept of one's voice is essentially the same thing as the *mental representation* discussed by Ericsson in his research on deliberate practice. In order to improve the skill, one must adjust the mental representation. The adjustment of the mental representation is guided by observations of how the body "naturally responds."

The singer must carefully observe the corresponding physical sensation and determine its level of healthy function based on its level of "freedom"- the amount of tension or absence of it. The heightened concentration and observation of this physical response provides feedback to the mind, which little by little, constructs a mental concept of what an unaffected and efficiently functioning voice should feel like.

In identifying with nature the student must learn the art of following the impetus of *unchecked* functional activities. This impetus manifests itself because the vocal organs respond by *moving*. As they react, the singer becomes aware of the character of the

¹¹² Cornelius Reid, *The Free Voice: A Guide to Natural Singing* (New York: Oxford University Press, 2018), 93.

movement in all its complexity, but especially with respect to its being freer or less free.”¹¹³

The mind must discover the meaning of interior bodily movements in terms of health or non-health as functional activities are carried out. It must learn to play a dual role, and remain both detached and involved in order to evaluate the natural impetus of the vocal organs as they seek their own freedom of expression. What the body knows, the mind must learn.¹¹⁴

Singing is a challenging discipline that involves exploration, experimentation and a great deal of patience. It involves listening to the body through heightened self-awareness and in-depth self-reflection to discover and solidify the sensation of efficient phonation. It takes time to guide the voice, letting it blossom into its natural sound and sustaining functional health, rather than channelling it into a predetermined sound pattern to which one has become attracted or become accustomed. The guidance of a voice teacher who knows how to recognize vocal sounds that are free and produced efficiently is invaluable. It is vital that the teacher and student work together to help establish a clear mental concept that will guide the healthy functioning of the student’s voice throughout her career.

Summary

Mindful meditation, goal setting, acquiring feedback, and mental concepts/representations are useful tools that will help singers of every level engage more deeply with their vocal training process. The vocal pedagogy researchers highlighted in this section are only a small representation of a much larger group of singers who have dedicated themselves to discovering new ways of enhancing vocal training and performance. Singers who wish to apply

¹¹³ Reid, *The Free Voice*, 23.

¹¹⁴ *Ibid.*, 171.

mindfulness and self-regulation to their vocal practices have this body of literature available for their educational benefit.

THE SURVEY

Purpose of Research

It has been clearly established that there are rewarding benefits to the utilization of mindful practice and self-regulation. The core purpose of this research project is to determine if these concepts have already been incorporated into the training and performance practice of classical singers. It also sets up a foundation for the exploration of how these concepts could further enhance the growth of efficient learning skills.

The research seeks to highlight the commonalities and differences between voice students and professional singers, with regards to their training and performance practices, as well as their perspectives on and experience with mindfulness and self-regulation. The notion that professionals (in any field, including music) are more efficient and healthier in their methods of practice is supported by published research.¹¹⁵ The differences that may arise could provide insight as to how students can be helped through adopting the efficient and healthier methods of practice demonstrated by professionals.

Survey Format

The research data was acquired through a comprehensive online survey hosted by SurveyMonkey. The survey consisted of three sections:

¹¹⁵ Nancy H. Barry and Susan Hallam, "Practice," In *The Science and Psychology of Music Performance: Creative Strategies for Teaching and Learning*, ed. Richard Parncutt, Gary E. McPherson (New York: Oxford University Press, 2002).

- 1) **Getting to Know Yourself** – a series of introductory questions providing the researcher with background knowledge on the participants (e.g., voice type, age group, level of experience, etc.). It allowed the researcher to divide the participants into two groups: 1) Voice Students – undergraduates, graduates, and young artists; 2) Professional singers – voice teachers and professional performers. This section was also designed to encourage participants to enter a more self-reflective state of mind, asking questions with regards to their frequency of practice, process of warm up, and familiarity with mindfulness meditation and mental practice. This provided the researcher with additional context for the “Quick Answer” sections.
- 2) **Quick Answer on Behaviour** – This section of the survey was constructed to determine if participants reacted in a way that exhibited mindful/self-regulatory behavioural patterns. The participants were asked questions regarding: 1) self-awareness/mindfulness, 2) ability to concentrate, and 3) level of self-confidence/security in current vocal skills. Each statement suggested a kind of behaviour taking place in either a general situation, or within a specific environment. Participants were asked to provide their answer on a matrix/rating scale (ranging from 1 = “never” to 5 = “always”). They were encouraged to move through the questions at a steady pace, instinctually selecting the answer that feels most appropriate at the moment. About half of the statements were phrased *positively* (e.g. I notice tension in my body and how it affects my voice), the other half of the statements were phrased *negatively* (e.g. I’m unsure if my voice is sufficiently warmed up). The positive statements suggest self-regulatory/mindful behaviour, while the negative statements may reflect a lack of self-regulation and awareness.

3) Quick Answer on Deliberate Practice Strategies – the statements presented in this section were designed to determine if certain deliberate practice strategies are being utilized, and if so, how frequently. These strategies have been extracted from past and current vocal pedagogy literature, and theoretically reflect processes rooted in self-regulatory mindfulness principles. This includes mental/imagery practices, which are core to establishing strong *mental representations*, as suggested by Anders Ericsson. Once again, participants were asked to rate how frequently they utilized the suggested strategy on a matrix/rating scale (1 = never, 5 = always).

The survey was organized under specific headings and categories for analysis, yet the actual survey presented to the participants did not delineate these categories. The statements were presented in a steady and uninterrupted stream, so that participants could focus on answering the question instinctually, without being influenced or distracted by the titles. In addition, the online survey was designed so that once a page of answers was submitted; the participants could no longer backtrack and return to change answers. The intention was to collect genuine responses that reflect the current knowledge and ability of the participants.

Survey Results and Analysis

Getting to Know Yourself

The Participants

Prospective participants were sent invitations via e-mail, which included a brief summary of the research topic and description of the survey. Interested participants who got in contact with the researcher were sent a private link to the survey through the SurveyMonkey host. The

researcher contacted a wide range of singers of varying levels of experience. Most of the participants are student and professional singers residing in Canada, although there were a few responses that came from the United States and Europe.

A total of 127 participants responded and accessed the survey. However, only 90 participants actually completed and officially submitted the survey. Although incomplete, the 37 partially answered surveys were included in the results, as they still contained usable information.

The majority of the responses came from participants in the 35-44 years age group, with a total of 38 participants. Participants were asked to select *singer categories*, pertaining to their level of experience as a singer. The researcher allowed for multiple categories to be selected, understanding that participants will most likely fall into more than one category. For example, several of the professional performers were also voice teachers, while some student singers were transitioning, straddling both graduate school and young artist opportunities. There was an abundance of professional singers (teachers/performers) who responded to the survey. A smaller number of student singers responded to the survey, and they were more or less equally dispersed across the three categories – student singer (undergraduate level), advanced student singer (graduate level) and young artist. Although it would have been ideal to have more responses in the student categories, there were enough submissions to acquire substantial results for comparisons with the professional group.

Regarding the voice types of the survey participants, there were a healthy number of sopranos, followed by mezzo-sopranos, no altos/contraltos, a moderate number of tenors and baritones and a handful of basses and counter-tenors.

Practice

Participants were asked to share information on their practice routines including frequency of practice, the approximate length of their warm up and overall practice session. Figure 8 presents the chart results of the student singers' response to the query regarding their frequency of practice. The majority of the students selected either five to six times per week, or three to four times per week. The option of "whenever I feel like it," was the third most selected option for the students. Figure 9 features the results of the professional singers' response to the same question with some noticeably differing results. Though a significant number of professional participants also selected five to six times and three to four times per week for practice, the majority of the professional singers selected the option of "whenever I feel like it." Some of the participants offered additional comments to this section which provided context for these results. Normally an upcoming performance will motivate both students and professionals to practice more often, especially in the weeks leading up to the show. When there is no impending performance to prepare for, there is the natural tendency to ease up on the practice routine, which is why the option of "whenever I feel like it" is a popular choice. Older professional singers, particularly singers who have shifted their focus completely from performance to teaching, will warm up in preparation for their teaching, but will most likely only practice for their own pleasure, whenever they choose to do so.

Several of the comments from both students and professionals mentioned the impact that the COVID-19 pandemic has had on their practicing routines. With the cancellation of performances, work contracts, and the shift to online learning, the traditional schedules and preparation patterns that singers have grown accustomed to have drastically changed, if it has not stopped all together. Interestingly, the survey has provided a platform through which singers

could share their concerns about these changes and their struggles to adapt during this very uncertain time. Many are disheartened, and admit that the cancellation of performances has reduced their motivation to practice:

During the school year, every day. During quarantine it is more like once a week.

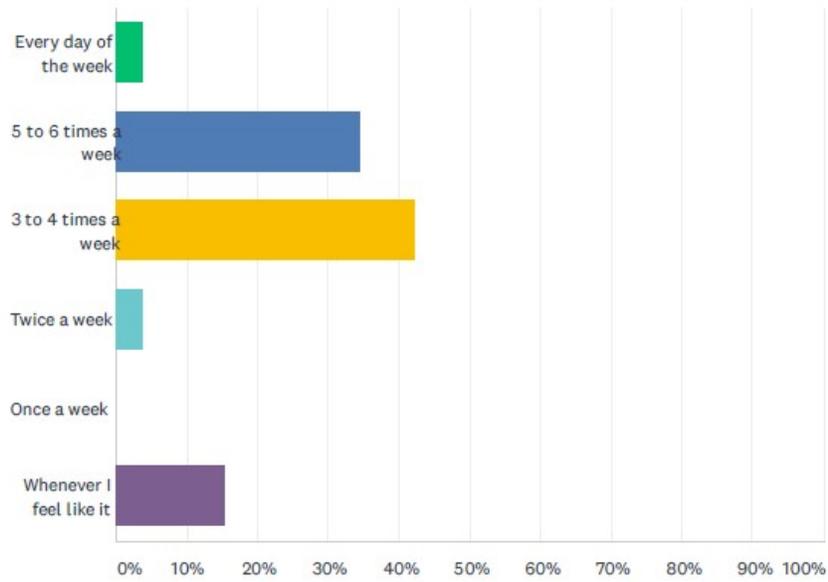
– Graduate Voice Student

Practice has radically reduced since the pandemic. Before March, I usually practiced every second day (3 to 4 times per week).

– Young Artist

Q5 How often do you practice?

Answered: 26 Skipped: 2

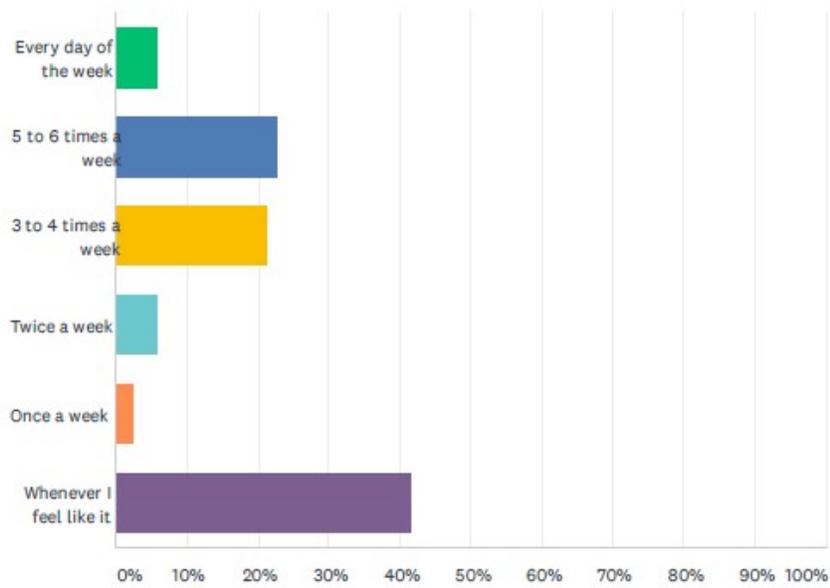


ANSWER CHOICES	RESPONSES	
Every day of the week	3.85%	1
5 to 6 times a week	34.62%	9
3 to 4 times a week	42.31%	11
Twice a week	3.85%	1
Once a week	0.00%	0
Whenever I feel like it	15.38%	4
TOTAL		26

Figure 8: Frequency of Practice – Student Results

Q5 How often do you practice?

Answered: 84 Skipped: 11



ANSWER CHOICES	RESPONSES	
Every day of the week	5.95%	5
5 to 6 times a week	22.62%	19
3 to 4 times a week	21.43%	18
Twice a week	5.95%	5
Once a week	2.38%	2
Whenever I feel like it	41.67%	35
TOTAL		84

Figure 9: Frequency of Practice – Professional Results

The majority of the participants, both professionals and student singers claimed that their standard practice session lasts about one hour to an hour and a half. Vocal warm ups last from about ten to fifteen minutes, or may vary according to the needs of the voice.

Participants were then asked to briefly describe their warm up procedure. SurveyMonkey provides an analytical tool called *Word Cloud*, which goes through the comments and highlights the most commonly utilized words. It generates an image of a series of words, with the more frequently used terms in a larger text font.

Q8 Please briefly describe your standard vocal warm-up procedure. Be as specific as you can. (Point form answers are welcome.)

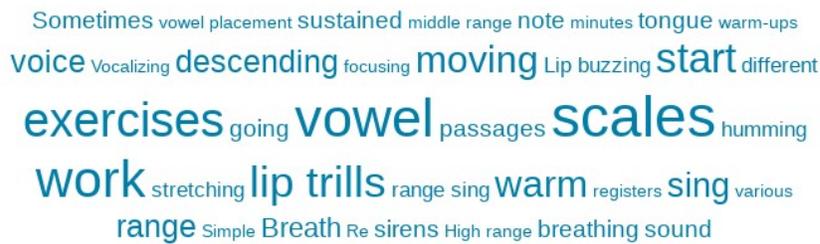


Figure 10: Description of Vocal Warm Up – Student Results

Q8 Please briefly describe your standard vocal warm-up procedure. Be as specific as you can. (Point form answers are welcome.)

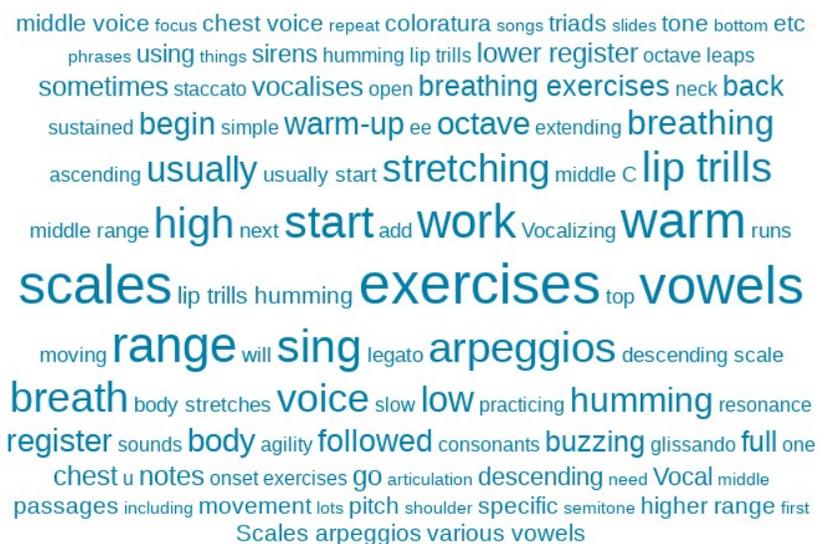


Figure 11: Description of Vocal Warm Up – Professional Results

Figure 10 is the Word Cloud image of the responses from the student singers, while Figure 11 is the image generated for the professional singers. There are similar words popping up for both of the groups, such as vowels, scales, lip trills, breath, breathing, humming, etc. The Word Cloud for the professionals is significantly longer. This is most likely due to the fact that a larger number of professional singers participated in the survey, and therefore more comments were offered from this group of singers. However, upon reading through the comments, in general the answers provided by the professionals were more in-depth and detailed (sometimes longer), compared to the student group.

Simple ascending warmup to the top-ish of my range. Simple descending warmup to the bottom of my range.

– Undergraduate Student Singer

Depends on what I will be practicing. Usually a mixture of high and low and sustained notes and melismatic passages.

– Young Artist

A few scales, most major, some minor. Some “messa di voce” on perhaps 5 different pitches. Some work on most vowels, but most work on [i]. Try to travel through different registers via scales.

– Young Artist

Start very lightly warming up the voice on a hum, voiced syllable, or lip trill. Then systematically warm up each section of my range. Usually begin with the lower register, moving in and out of chest voice. I work up in my range using a variety of exercises that work different aspects of my voice: speed, agility, sustain. I use a variety of vowel sounds and sometimes warm up on nonsense words. Goal is to begin to have a free flowing sound through the registers and begin to connect to my support. Sometimes I start with exercises to target my support – panting breaths and accent breathing on consonants such as SH, SS, CH, TS etc...

– Professional Singer

I begin with physical stretches, posture and alignment work and mindful directions to muscle groups to release my idiosyncratic tensions. Large muscle groups first then smaller muscles of neck, jaw, tongue. I begin vocalizing with very light humming and oohing mostly in 5 note descending scales. Then a very light glottal vocal fold exercise. I next do a gentle two octave sirening from very low chest (on uh) through mid range (on oh) to a high range (on ah) and back down again. Then “cuperto” exercise – descending major scales on a tiny ooo. I return to some buzzing and lip trills, with greater connection to the breath. Then ascending and descending triads, octave arpeggios, and expanded arpeggios. Finally I will sing a few lines of a piece I know really well to get the voice grounded in text. Usually Mozart arias.

– Professional Singer

The sample professional quotes above reflect more experience with and knowledge of singing. These singers offer a variety of specific technical tools, and their explanations indicate an understanding and awareness of how these tools help to warm up their voices.

Mindfulness Meditation

The participants were questioned regarding their understanding and experience with mindfulness. The singers were first asked about meditation, since it is considered a starting point for mindfulness practice (mindfulness stage one). The participants were asked whether or not they engaged in meditation, and if they did, to describe their meditation process.

Some of the student singers simply stated “no”, perhaps indicating no experience with meditation or a lack of interest in the activity. A few students shared some candid answers that disclosed interesting patterns.

I attempted to, but to no avail. Each time I found it extremely difficult not to get wrapped up in my own thinking and release any distractions.

– Undergraduate Student Singer

I have tried, but I find that I get really anxious when I try to slow down.

– Undergraduate Student Singer

Yes I used to do guided meditations (YouTube) each night before bed. I don't do it as much anymore, but I should. I found it very calming.

– Undergraduate Student Singer

The example comments above revealed some anxiety and difficulty in concentrating. All three responses came from undergraduate student singers, perhaps reflecting a common pattern of behaviour for the younger generation of singers, and even the student population in general.

They perceive meditation as an activity to calm the nerves and aid concentration, but admit that they are inconsistent with the practice, and find little success in their attempts.

Based on these student responses, it seems that their engagement with meditation is quite passive and on a surface-level. These students most likely have the expectation that anxieties and distractions simply melt away the moment they “meditate.” They are drawn to the benefits of the practice, but only have a basic understanding of and interaction with the process. Kabat-Zinn’s process of mindfulness meditation seems simple, but it is by no means an easy task. It requires active engagement - a willingness to acknowledge distracting thoughts, and return attention to the breath, as many times as needed. It is a practice of consistency, which can lead to increased concentration, awareness, and eventually the ability to dispel anxiety.

The responses from the professional singers also offered interesting results and perspectives. A few participants skipped the question, a number of them also simply answered “no”, and several of the answers reflected casual attempts at meditation. There may even be a slight tinge of negativity towards it, perhaps seeing it as a corny, “new age” method. Once again, it seems that meditation is viewed only as a calming activity to help clear the mind and reduce stress. Based on these responses, meditation is not specifically perceived or utilized as an exercise for developing focus and increasing one’s length of concentration.

Yes, I have. Various ways. Guided meditations, or just focusing on breathing, etc. Don’t do it regularly.

– Professional Singer

For many years, 8 or so, I practiced yoga and meditation. But not in a very regular fashion.

– Professional Singer

Guided meditation (Headspace) daily, usually in the morning. Walking is often done with mindfulness.

– Professional Singer

Yes, I have meditated before. No consistent meditation practice, but practice regularly on and off. Practice mindfulness meditation, mindfulness of breathing, metta bhavana, and yoga. Personal meditation time generally includes 5-20 minutes seated with eyes closed focusing on the breath and allowing thoughts to pass. Use it mainly as an aid for anxiety and stress.

– Professional Singer

I practice mindfulness within the activities I undertake day-to-day but don't have a practice of sitting down on a cushion to meditate.

– Professional Singer

Some professionals seemed to have a better understanding of meditation having encountered it in yoga. A few mentioned that they regularly follow a guided meditation process through audio apps such as *Headspace*. This would be another interesting area of research, looking into a possible reliance on technology such as phone apps and YouTube to help “clear the mind”, so to speak, by distracting one’s thoughts.

Mental Practice

The core purpose of mental practice is to cultivate and strengthen *mental representations*. A term coined by psychologist Anders Ericsson, mental representations are meaningful patterns of information held in long-term memory. It is a conceptual structure that guides and allows for quick and effective responses in the performance of a task. The more a person invests in the study of a discipline the more detailed his mental representations will become.

The research participants were asked if they had ever engaged in mental practice before. If they had, they were asked to describe their process of mental practice. If not, they were still encouraged to share what they thought mental practice was. Several of the student singers

expressed that they weren't exactly sure what mental practice involved. However, their responses indicate that they have engaged in mental practice through simple activities such as reviewing scores silently while riding the subway or going over song lyrics/text in their minds. A few suggested that mental practice involved visualizing how an actual performance would feel. Others link mental practice to looking at and/or imagining specific images and words to help enhance their performance.

If mental practice is rehearsing a song/specific passage in your head, then yes! I do it all the time. I pick a section where I'm struggling with a rhythm or pronunciation, and drill. Whenever I am vocally sick or tired, I often go over pieces in my head as well.

– Undergraduate Student Singer

Yes, I usually picture myself onstage or picture how I will perform a work. I think about the physical aspects of performance and how it will look on stage.

– Undergraduate Student Singer

I don't know what this is but I am assuming that it is practice done outside of the practice room, without actually singing. If this is the case then I do this all the time. Being in school and having a number of instances where I need to be prepared to sing and just having a limited amount of free time to spend finding a practice room or piano. A great deal of my practice is mental. This generally includes either speaking or thinking through the text in tempo, thinking through the song, or thinking through a performance scenario.

– Graduate Student Singer

I have tried to physically feel the sensations of singing without singing. I think that is mental practice.

– Graduate Student Singer

Mental practice sounds like visualization. Without physically practicing, you take time to imagine what the ideal situation would feel like.

– Graduate Student Singer

I usually dedicate 10 minutes before performance for mental practice. I always have a piece of paper with points on it to review right before performance. They might not be musical points to remember. Most of the time they are motivational words. Sometimes I print off pictures that might enhance my performance.

– Young Artist

The responses given by the group of professional singers also offered a variety of approaches and reflected various levels of understanding when it comes to mental practice. Some of the comments were similar in nature to the students' answers. Meditation and positive thinking were common answers. Quite often, mental practice was thought of as memorization while “not singing.” In fact, it was frequently defined as “silent practice,” giving the impression that mental practice simply involved reviewing music with no vocal phonation. A few professional participants shared very detailed descriptions of their mental practice process, reflecting a better understanding of how it works and a deeper appreciation of its benefits:

Yes, I have engaged in mental practice using visualization to picture in my mind a scenario (performance or audition) in great detail. In this process I take my mind through the performance start to finish exactly as I would want it to go. This allows me to prepare for the scenario, ease any anxiety I may feel about it, and trick my brain into believing it has already happened.

– Professional Singer

Yes – it is so useful. Helps memorization. Helps deals with frustrating blocks in kinaesthetic-based practice (e.g. things you are stuck on in your actual performance of the music). For me it's akin to meditation. For big shows, I've used it to visualize a whole recital in my mind on several occasions. Usually seated comfortably on the floor. I imagine everything. Walking out to the performance space, starting the first set (or piece), finishing a piece, bowing, setting up for the next. I try to imagine in as much detail as possible. I've also done a mini version, where I sit and think through tricky parts of repertoire I'll be performing.

– Professional Singer

Yes! Very important. Singing through a piece in my head. Errors I make in my head tend to repeat when I sing out loud. It's a great way to work through them. Emoting the piece – feeling out the text. Going through staging in my head and visualizing the moment. Thinking through the emotional journey of the role/set/cycle of music. Performing the whole thing in my head before I start singing on the day of a performance. Singing a specific bar or passage aloud before sleeping and thinking about it as I fall sleep. It's often learned correctly by the morning.

– Professional Singer

The comments above, shared by professional singers, placed more emphasis on a connection between mental practice and actual improvement in vocal performance. Their descriptions implied an awareness of a mind-body connection in their singing. They have detailed visualizations of how they want their bodies, voices and emotions to progress through their performance routine from start to finish. They have also utilized mental practice in addressing specific challenges such as musical errors, and poor vocal production habits.

Based on the example testimonies from the professionals, it would seem that mental practice is much more than just reviewing music silently in one's head. It is a tool that can be harnessed for much greater in-depth learning.

Vocal Consistency¹¹⁶

The participants were asked questions regarding vocal consistency, beginning with how they would rate the consistency of their own vocal technique. On a scale of 1 to 10, with 1 = “inconsistent”, and 10 = “very consistent”, the majority of the student singers' ratings were split between 5 and 7. The majority of the professional singers gave themselves a rating of 8 for vocal consistency. A good number of professionals also rated themselves at a level of 7 and at a level of 9. Based on these specific results, one could surmise that years of experience and practice result in a higher level of consistency, as well as a stronger “self-belief” in that consistency.

¹¹⁶ Please refer to Figure 12 (pg. 106) and Figure 13 (pg. 107).

The following question asked the participants to describe vocal consistency in general. The comments shared by the student group included terms like *stable breath, steady and unforced tone, legato, and consistent vibrato*. Vocal consistency was described as the ability to repeatedly produce a quality sound in various situations. A person who was vocally consistent made fewer mistakes, and overall, felt good about her own sound production. Many of the participants thought of vocal consistency as being able to rely on one's vocal technique; even when one is feeling particularly ill.

My vocal techniques are very involved with muscle memory, so sometimes it takes a lot of work to grow out of old habits. Words that comes to mind with Vocal consistency: technique in muscle memory (it's second nature), healthy voice that carries no matter the repertoire, stylistic flexibility without straining the voice.

- Undergraduate Student Singer

The ability to express the meaning of the text without having to focus on specific technical problems – being able to rely on your voice to know and do certain things – not having to revisit the same technical problems all the time.

- Undergraduate Student Singer

Knowing that even on a day when I'm not feeling 100% that my technique/voice is going to be there for me to fall back on. This includes an even tone, seamless transition between registers, and strong breath support.

- Graduate Student Singer

When I think of vocal consistency, I think of good technique that is applied even during "off days", or when nervous. I don't think everyone will always sing at their prime every time because we are only human. But I do think there is a certain level of consistency that can be reached where the singer can handle emotions/states that can affect the technique. The technique becomes innate at this point. When the singer is shaken by something, perhaps stage fright, or personal problems, their technique is less affected because it is applied naturally.

- Young Artist

The word “stability” comes to mind. Stable and consistent breath support and stable larynx. Muscle memory and habits that are instilled and automatic in the body.

- Young Artist

Ability to perform with your voice as you want it to. Confidence that you can do what you musically want to easily, without a huge battle mentally or physically.

- Young Artist

Muscle memory was another term often mentioned by the student singers. For many of them, vocal consistency refers to healthy vocal habits that have become ingrained and that respond automatically to musical and interpretive demands.

The comments shared by the professional singers covered a lot of the same concepts as the students, with the addition of a few more technical terms and descriptors: *balance, freedom, resonance, connection, bright, colourful, appoggio, uniformity, registers, effortless, agile, air flow.*

Ebb and flow, natural, evenness of tone, vibrato and breath control. Even colour and texture between registers. Longevity.

– Professional Singer

Evenness of tone, ability to achieve optimal results in terms of resonance, colour, and projection in different registers; smooth transitions, mixing of registers.

– Professional Singer

Uniformity within the entire range of the voice – similar results every time you practice/sing a piece – good vocal health, no fatigue after singing.

- Professional Singer

A dependable healthy sound that is produced with ease at a high artistic level.

– Professional Singer

The student singers answered from a more theoretical standpoint. There is some distance from the question, as vocal consistency is a goal that they are still working towards.

Interestingly, several of the professional singers interpreted the question as a continuation of the rating scale question, describing vocal consistency in relation to their own personal experiences. Some of them shared very genuine and candid statements about their own challenges with vocal health, and even psychological trauma due to a mentor's comment.¹¹⁷ Professional singers obviously have had more challenging encounters, which added gravitas to their responses.

One other interesting point that must be made was that only one response from the professional group perceived vocal consistency as a connection between the mind and body.

Ability for voice to do as brain commands on a regular basis.

- Professional Singer

Performance Level¹¹⁸

The participants were asked to rate their level of performance (i.e., performing in front of an audience), with a rating of 1 = “poor” to a rating of 10 = “excellent”. The student participants' answers fell evenly across the ratings of 6, 7, 8, and 9, with the weighted average being 7.24.

The professional performers scored themselves higher, with the majority rating themselves at an 8, 9, or 10. The weighted average of the professionals was 8.33. It is worth noting that a few singers in the professional group scored themselves below the mid mark with a

¹¹⁷ These personal comments have not been included as example quotes, in order to respect and protecting the participants' anonymity.

¹¹⁸ Please refer to Figure 14 (pg. 108) and Figure 15 (pg. 109).

rating of 4 = “adequate,” whereas none of the singers in the student group rated themselves below a 5.

Anxiety¹¹⁹

The next rating question required the participants to evaluate their level of anxiety. A significant percentage of the student group scored themselves a 10 = “real worrier.” Eighteen out of the 25 students who responded scored themselves at an anxiety level of 5 or higher. The rest of the student responses were more or less evenly distributed across the lower ratings. The weighted average ended up being 6.56 for the student group.

The professional singers had a more even distribution across the anxiety rating scale, although a large percentage of the participants scored themselves at a rating of 5 or higher. The professional singers’ weighted average totalled to 5.91, just a bit lower than the student average,

Connected to the anxiety rating scale, the next survey question asked participants to select all the symptoms they experienced when they are about to sing at a high-stakes performance (e.g., audition, competition, jury, etc.). They were provided with a checklist, adapted from the book *Power Performance for Singers: Transcending the Barriers* by Emmons and Thomas.¹²⁰

The symptoms which were most often selected and therefore ranked higher by the participants have been noted and listed below:

¹¹⁹ Please refer to Figures 16 – 21 (pgs. 110 – 115)

¹²⁰ Emmons and Thomas, *Power Performance*, 153.

Student Singers (25 participants who responded)

- *Increased adrenaline* – 20 participants
- *Worry* – 18 participants
- *Pounding heart* – 17 participants
- *Feeling of being overwhelmed* – 15 participants
- *Loss of confidence* – 14 participants
- *Fear* – 13 participants
- *Loss of appetite, Increased muscle tension, Forgetfulness* – 11 participants
- *Frequent bathroom trips, Dry mouth, Narrowing of attention* – 10 participants

Professional Singers (83 participants who responded)

- *Increased adrenaline* – 65 participants
- *Frequent bathroom trips* – 46 participants
- *Pounding heart* – 42 participants
- *Worry* – 42 participants
- *Dry Mouth* – 38 participants
- *Loss of Confidence* – 34 participants
- *Fear, Sleeplessness* – 28 participants
- *Narrowing of attention* – 22 participants
- *Increased muscle tension* – 21 participants

There are similarities in the answers between the student group of singers and the professional group. *Increased adrenaline*, *worry*, and a *pounding heart* rank high as top symptoms felt by all the participants. *Frequent bathroom trips*, commonly selected by both groups, was ranked much higher by the professional group. The professional singers also selected *sleeplessness* as a symptom more frequently than the students. The *loss of confidence* was a shared symptom, rated quite evenly between the two groups. However, the *feeling of being overwhelmed* was ranked much higher by the student participants than the professional participants. Taking into account that the number of student singers is considerably less than the professional singers, it should be acknowledged that these calculations may change with a more

even number of participants. Albeit a rougher estimation, the survey results do offer some interesting patterns that can be used as a basis for further research.

Confidence and Flow

The *Getting to Know Yourself* section of this survey was designed to give participants an exercise in self-reflection. It also gave the researcher a base perspective on how much and how often the basic principles of mindfulness and self-regulation/deliberate practice were being applied to the participants' vocal training. The singers' responses to the questions regarding their practice routine and warm up process indicated that most singers are familiar with the concepts and have applied them at varying levels – the professionals more so than the students.

However, how effectively they are implementing these concepts is difficult to surmise based on the survey questions alone. A participant could claim that she is practicing a certain way. Realistically, the research can only gain more accurate information through direct observation.

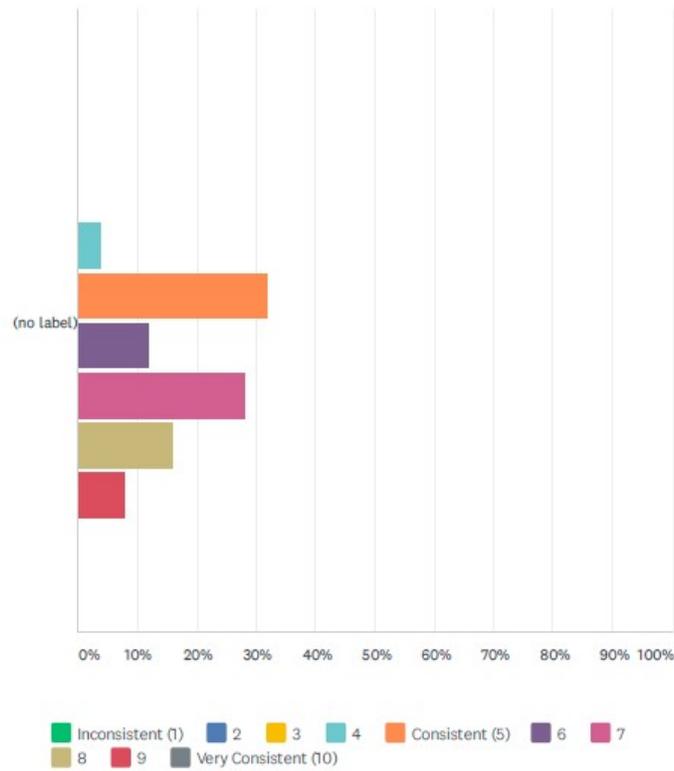
According to the writings of Kabat-Zinn and Csikszentimihalyi, people who are mindful will exhibit a sense of security and confidence. This sense of assurance comes from a consciousness that is “harmoniously ordered,” and a mind that is ordered will have a greater chance of experiencing more optimal experiences and states of effortless *flow*. Detailed and succinct comments were more often offered by the professional singers, giving an impression that their thoughts and mental processes were well-organized compared to the students. Asking the participants to rate their own performance level and level of anxiety was another opportunity to gain insight into their level of confidence. The results once again reflected a higher level of performance and self-assurance from the professional group. Most likely the professional

singers will have experienced the state of *flow* more frequently and more consistently than the student singers.

The next two sections of this survey – *Quick Answer on Behaviour*, and *Quick Answer on Deliberate Practice Strategies* – will provide more data, this time acquired through a rapid question format. The new information could corroborate the current results, or set up interesting contradictions.

Q33 On a scale of 1 to 10, how would you rate the consistency of your overall vocal technique?

Answered: 25 Skipped: 3

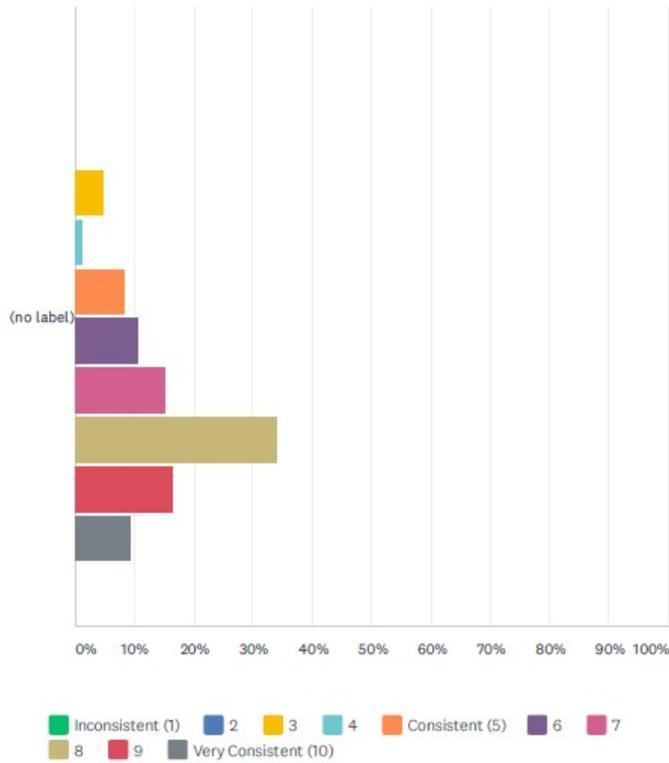


	INCONSISTENT (1)	2	3	4	CONSISTENT (5)	6	7	8	9	VERY CONSISTENT (10)	TOTAL	WEIGHTED AVERAGE
(no label)	0.00%	0.00%	0.00%	4.00%	32.00%	12.00%	28.00%	16.00%	8.00%	0.00%	25	6.44
	0	0	0	1	8	3	7	4	2	0		

Figure 12: Consistency of Vocal Technique (Student Results)

Q33 On a scale of 1 to 10, how would you rate the consistency of your overall vocal technique?

Answered: 85 Skipped: 10

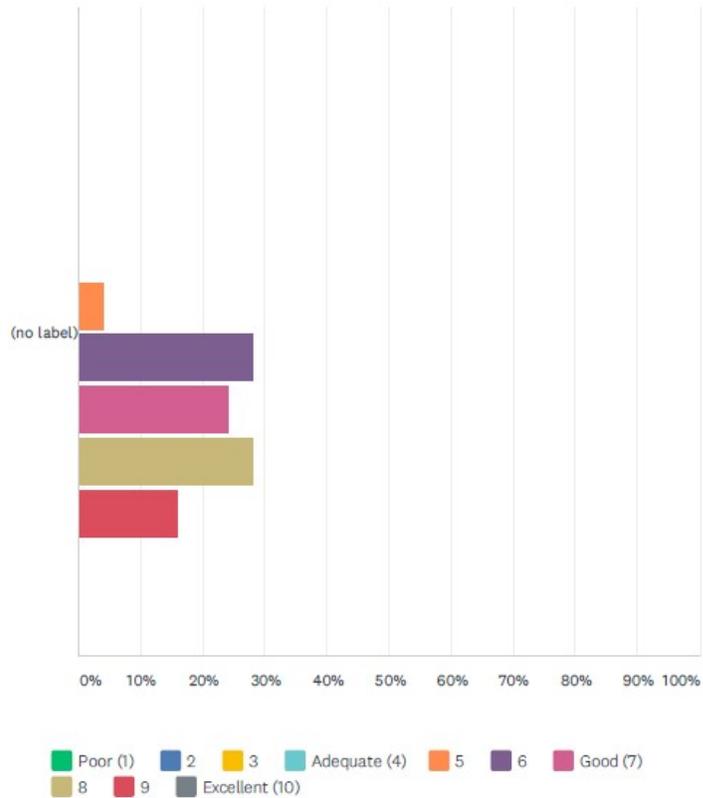


	INCONSISTENT (1)	2	3	4	CONSISTENT (5)	6	7	8	9	VERY CONSISTENT (10)	TOTAL	WEIGHTED AVERAGE
(no label)	0.00%	0.00%	4.71%	1.18%	8.24%	10.59%	15.29%	34.12%	16.47%	9.41%	85	7.46
	0	0	4	1	7	9	13	29	14	8		

Figure 13: Consistency of Vocal Technique (Professional Results)

Q35 How would you rate your level of performance (i.e. performing in front of an audience)?

Answered: 25 Skipped: 3

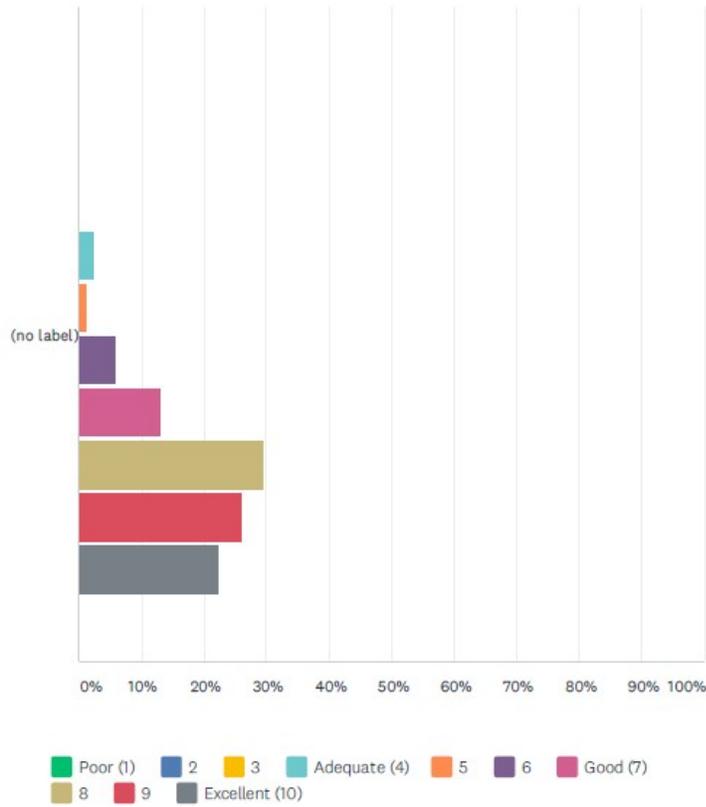


	POOR (1)	2	3	ADEQUATE (4)	5	6	GOOD (7)	8	9	EXCELLENT (10)	TOTAL	WEIGHTED AVERAGE
(no label)	0.00% 0	0.00% 0	0.00% 0	0.00% 0	4.00% 1	28.00% 7	24.00% 6	28.00% 7	16.00% 4	0.00% 0	25	7.24

Figure 14: Level of Performance (Student Results)

Q35 How would you rate your level of performance (i.e. performing in front of an audience)?

Answered: 85 Skipped: 10

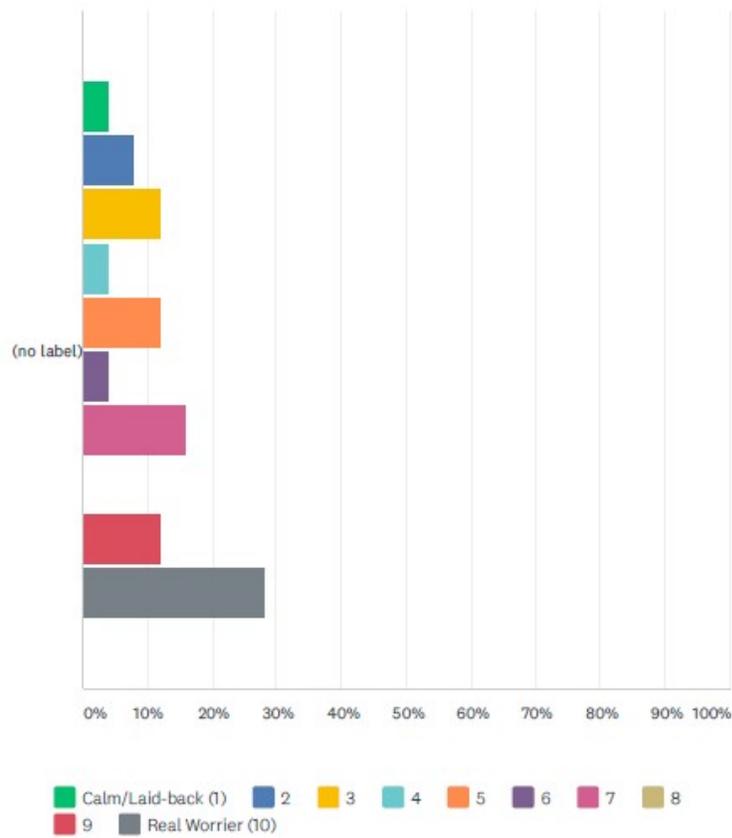


	POOR (1)	2	3	ADEQUATE (4)	5	6	GOOD (7)	8	9	EXCELLENT (10)	TOTAL	WEIGHTED AVERAGE
(no label)	0.00% 0	0.00% 0	0.00% 0	2.35% 2	1.18% 1	5.88% 5	12.94% 11	29.41% 25	25.88% 22	22.35% 19	85	7.46

Figure 15: Level of Performance (Professional Results)

Q36 In general, how would you rate yourself as an anxious person?

Answered: 25 Skipped: 3

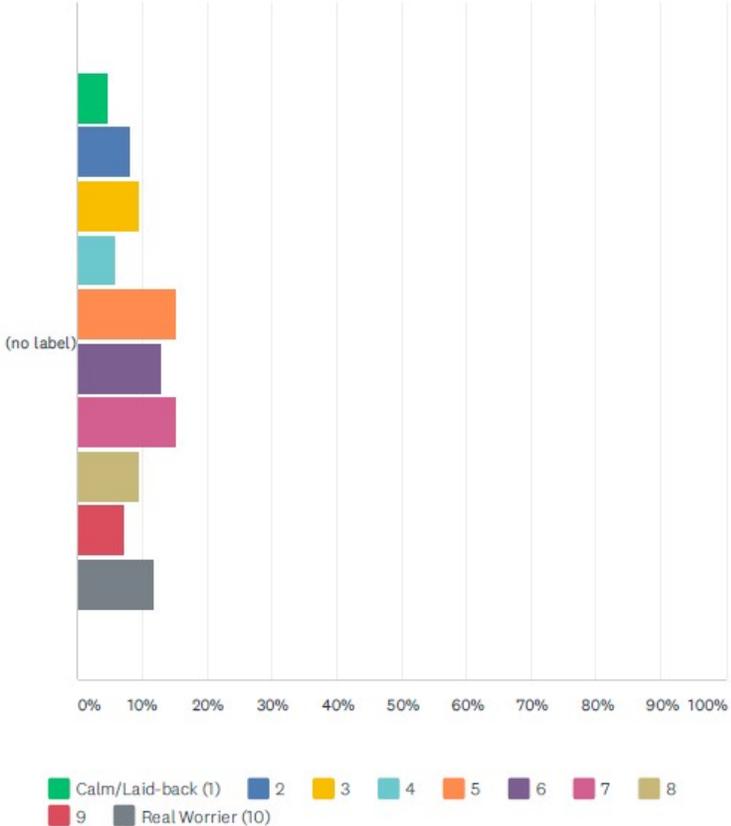


	CALM/LAID-BACK (1)	2	3	4	5	6	7	8	9	REAL WORRIER (10)	TOTAL	WEIGHTED AVERAGE
(no label)	4.00%	8.00%	12.00%	4.00%	12.00%	4.00%	16.00%	0.00%	12.00%	28.00%	25	6.56
	1	2	3	1	3	1	4	0	3	7		

Figure 16: Level of Anxiety (Student Singers)

Q36 In general, how would you rate yourself as an anxious person?

Answered: 85 Skipped: 10



	CALM/LAID-BACK (1)	2	3	4	5	6	7	8	9	REAL WORRIER (10)	TOTAL	WEIGHTED AVERAGE
(no label)	4.71%	8.24%	9.41%	5.88%	15.29%	12.94%	15.29%	9.41%	7.06%	11.76%	85	5.91
	4	7	8	5	13	11	13	8	6	10		

Figure 17: Level of Anxiety (Professional Singers)

Q37 When you are about to sing at an audition, competition, jury or important "high-stakes" performance, do you experience any of the following symptoms? Check off all that apply:

Answered: 25 Skipped: 3

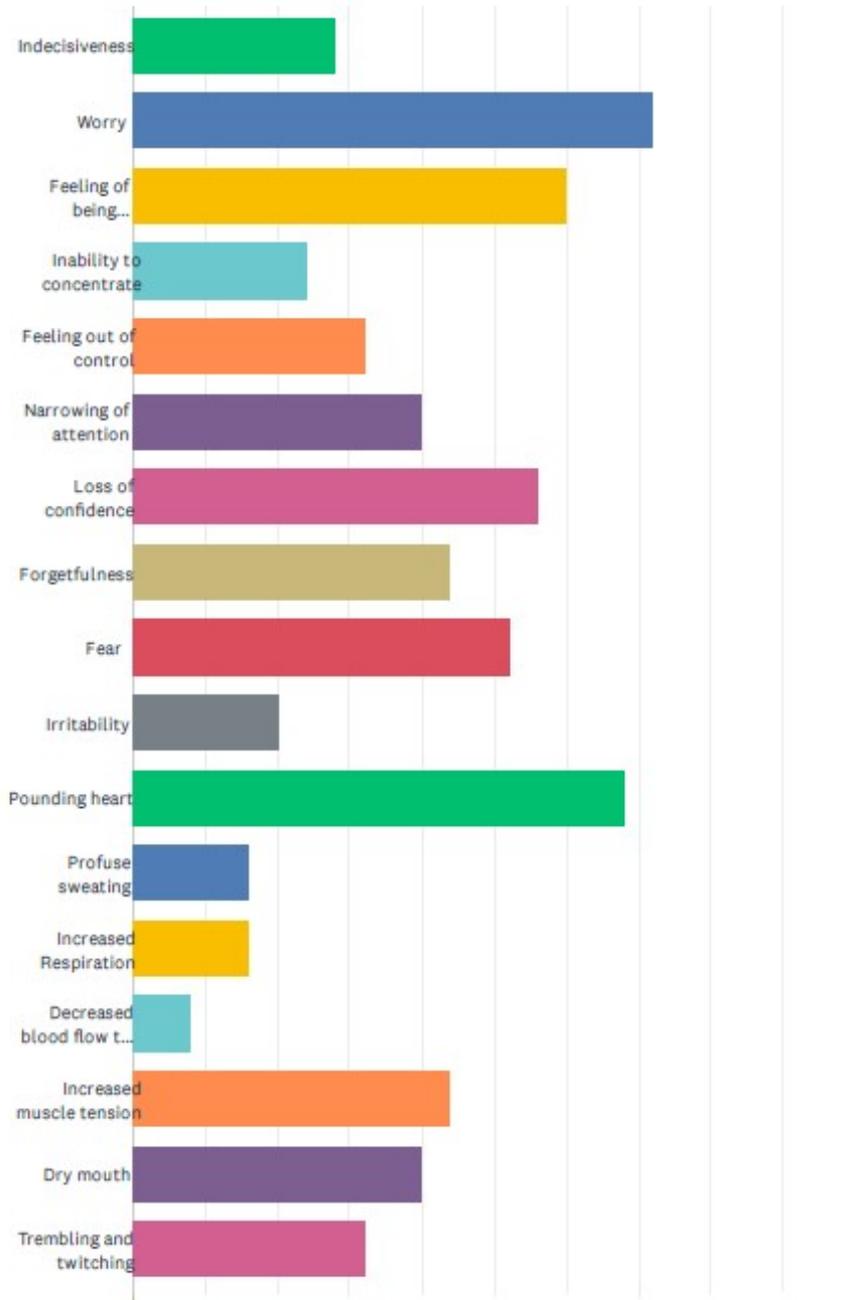
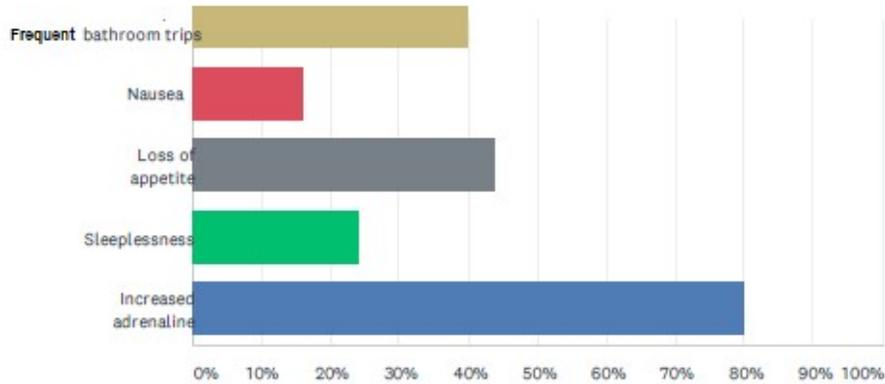


Figure 18: Symptoms Chart (Student Results)



ANSWER CHOICES	RESPONSES	
Indecisiveness	28.00%	7
Worry	72.00%	18
Feeling of being overwhelmed	60.00%	15
Inability to concentrate	24.00%	6
Feeling out of control	32.00%	8
Narrowing of attention	40.00%	10
Loss of confidence	56.00%	14
Forgetfulness	44.00%	11
Fear	52.00%	13
Irritability	20.00%	5
Pounding heart	68.00%	17
Profuse sweating	16.00%	4
Increased Respiration	16.00%	4
Decreased blood flow to the skin	8.00%	2
Increased muscle tension	44.00%	11
Dry mouth	40.00%	10
Trembling and twitching	32.00%	8
Frequent bathroom trips	40.00%	10
Nausea	16.00%	4
Loss of appetite	44.00%	11
Sleeplessness	24.00%	6
Increased adrenaline	80.00%	20
Total Respondents: 25		

Figure 19: Symptoms Chart (Student Results – continued)

Q37 When you are about to sing at an audition, competition, jury or important "high-stakes" performance, do you experience any of the following symptoms? Check off all that apply:

Answered: 83 Skipped: 12

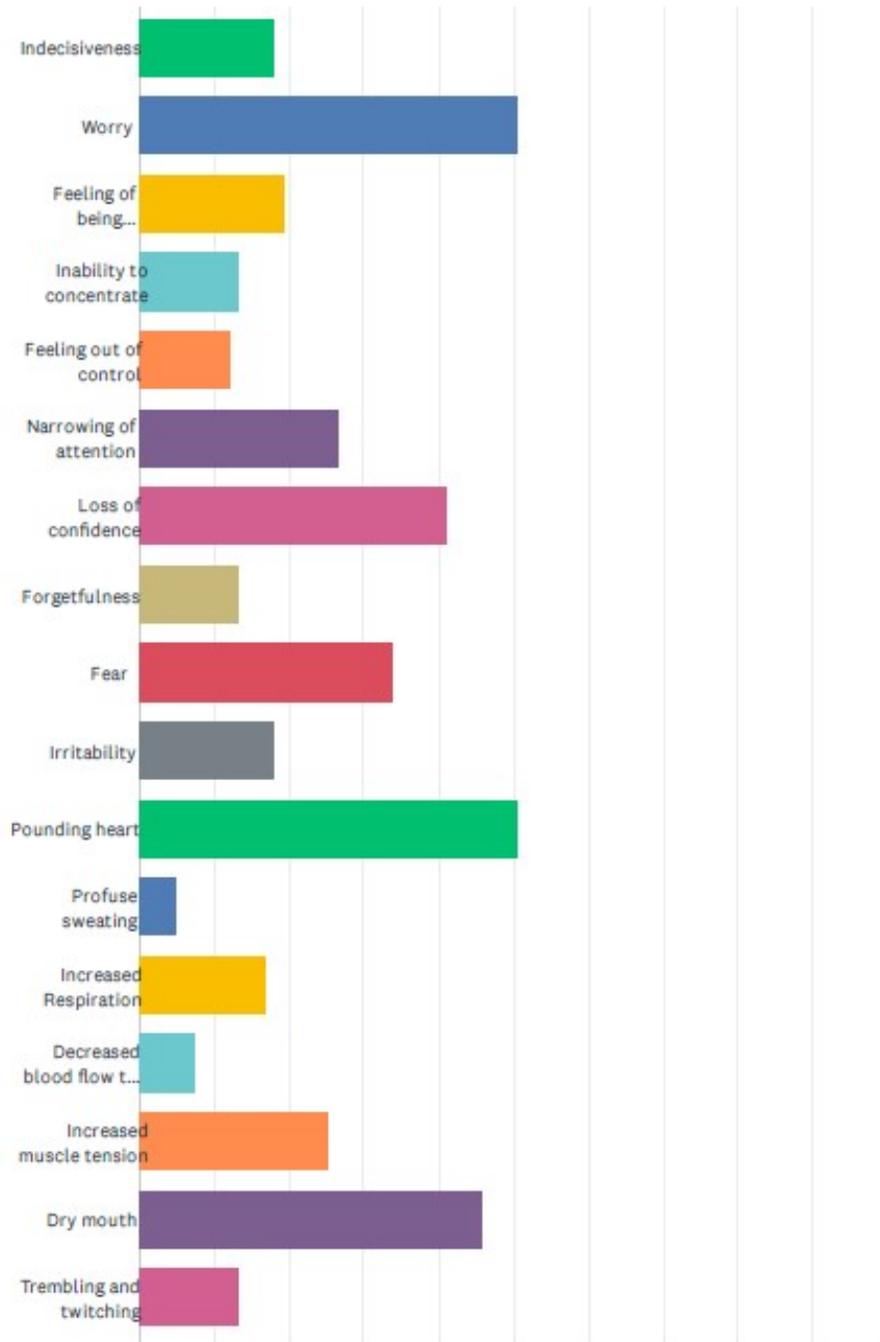
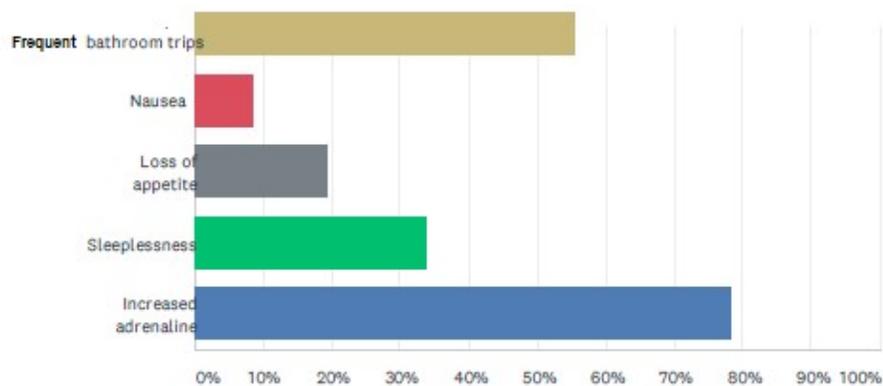


Figure 20: Symptoms Chart (Professional Results)



ANSWER CHOICES	RESPONSES	
Indecisiveness	18.07%	15
Worry	50.60%	42
Feeling of being overwhelmed	19.28%	16
Inability to concentrate	13.25%	11
Feeling out of control	12.05%	10
Narrowing of attention	26.51%	22
Loss of confidence	40.96%	34
Forgetfulness	13.25%	11
Fear	33.73%	28
Irritability	18.07%	15
Pounding heart	50.60%	42
Profuse sweating	4.82%	4
Increased Respiration	16.87%	14
Decreased blood flow to the skin	7.23%	6
Increased muscle tension	25.30%	21
Dry mouth	45.78%	38
Trembling and twitching	13.25%	11
Frequent bathroom trips	55.42%	46
Nausea	8.43%	7
Loss of appetite	19.28%	16
Sleeplessness	33.73%	28
Increased adrenaline	78.31%	65
Total Respondents: 83		

Figure 21: Symptoms Chart (Professional Results – continued)

Quick Answer Sections

The *Quick Answer* sections featured a series of matrix/rating questions that participants were encouraged to answer at a steady pace, relying on their first instincts for the most appropriate answers. It differed from the *Getting to Know Yourself* section, in which the participants had to take more time to respond in short paragraphs for some of the questions.

The quick answer questions were grouped into three categories: 1) general self-awareness/mindfulness, 2) the ability to concentrate, and 3) their level of confidence and security in their current vocal skills. The questions guided the participants through various scenarios – *general* (meaning applicable to multiple scenarios), in the *practice studio*, a *lesson/coaching*, *rehearsal*, an *audition/competition*, a *performance*, *post-performance*, and a *recording session*. These questions were presented in a continuous stream. The participants were unaware of the question categories. The goal was to acquire a raw data set from the more spontaneous responses of the participants that could support or contradict the more carefully answered questions in the first half of the survey.

On Behaviour: Self-Regulation and Mindfulness

Each statement in this section suggested a behavioural response taking place within one of the scenarios mentioned above. Participants were asked to rate their behavioural response on a scale - 1 = “never”, 2 = “rarely”, 3 = “sometimes”, 4 = “often”, and 5 = “always” - indicating how frequently they reacted in a certain manner. In order to establish a means of quantifying these behavioural responses, the researcher assigned a positive or negative trait to each of the statements. The positive and negative statements were mixed together, often presented alternatively. The positive statements suggested self-regulatory/mindful behaviour, while the negative statements possibly reflected a lack of self-regulation and awareness. The positive

statements and negative statements were calculated separately. The student group and the professional group each received two scores, a positive average and a negative average. It is noted that these positive and negative labels are prone to subjectivity. Nonetheless, it provided a workable system through which informative results were acquired. A high positive score could indicate frequent mindful/self-regulatory behaviour, whereas a high negative score could suggest a lack of mindfulness/self-regulation.

Presented below are the weighted averages for the *Quick Answer on Behaviour* section. Figure 22 displays the positive averages, and Figure 23 displays the negative averages.

Quick Answer on Behaviour – Positive Statements

The first set of statements is categorized under *General Self-Awareness/Mindfulness Behaviour*. Scanning through the weighted averages in Figure 22, one can see that overall, the professional singers scored higher than the student singers. When averaging all of the weighted averages together, the professionals scored a section average of **4.03**, while the students scored **3.98**. This would suggest that the professionals exhibit general self-awareness and mindful behaviour more frequently than the students. To provide context, positive statement examples are given below:

- I'm aware of the kinds of distractions that draw my attention.
- I'm aware of the moments/places in the music where I lost my concentration.
- After a practice session, I know what I need to work on and the steps to take.
- I can objectively describe how my voice feels to my mentor
- I observe how other people interact with each other at rehearsal

SELF-AWARENESS/MINDFULNESS		
QUICK ANSWER ON BEHAVIOUR - Positive Statements - Weighted Averages		
(1= Never, 2= Rarely, 3=Sometimes, 4=Often, 5=Always)		
General Self-Awareness/Mindfulness		
Section	Undergrad/Grad/Young Artist	Professionals (Teachers/Performers)
General Situations	3.88	4.01
Practice Studio	3.88	4.16
Lesson/Coaching	3.86	3.97
Rehearsal	4.08	4.3
Audition/Competition	3.84	3.56
Performance	3.84	3.89
Post-performance	4.12	4.32
Recording Session	4.32	4.04
Section Average	3.98	4.03
Ability to Concentrate		
Section	Undergrad/Grad/Young Artist	Professionals (Teachers/Performers)
General/Practice Studio	3.8	4.06
Lesson/Coaching	3.83	3.82
Rehearsal	4.11	4.2
Audition/Competition	3.88	3.71
Performance	4.06	4.3
Post-performance	3.83	3.89
Recording Session	3.42	3.55
Section Average	3.85	3.93
Self-Confidence/Security in Vocal Skills		
Section	Undergrad/Grad/Young Artist	Professionals (Teachers/Performers)
General Situations	4.08	4.12
Practice Studio	3.6	3.8
Lesson/Coaching	4.33	3.97
Rehearsal	4.06	4.26
Audition/Competition	3.94	3.76
Performance	4.2	4.36
Post-performance	3.92	3.94
Recording Session	3.71	3.64
Section Average	3.98	3.98

Figure 22: Quick Answer on Behaviour (Positive Averages)

The second set of statements is categorized under the *Ability to Concentrate*. Once again, the professional group scored higher than the student group with a section average of **3.93** versus a section average of **3.85**. Looking at the General/Practice Studio scenario, the professional singers far outscore the student group, indicating a higher ability to concentrate. Positive statements in this scenario include:

- I can concentrate on sensations in my body (i.e., vibrations in my head, chest, etc.).
- I can move past mistakes and sing through to the end of the piece without stopping.
- If I get distracted, I can bring my attention back to my singing/present task at hand.

The third set of statements is categorized under *Self-Confidence/Security in Vocal Skills*. Interestingly, the section averages for the student group and the professional group are the same, **3.98**. In most of the scenarios, the professionals still scored themselves a little higher than the students, particularly in the following statements:

- I know myself and trust my practicing process. (Pros = **4.11**; Students = **3.63**)
- I feel I have accomplished something after a practice session. (Pros = **3.91**;
Students = **3.63**)
- I'm aware of the positive qualities of my voice while I'm singing. (Pros = **3.79**;
Students = **3.58**)
- I'm comfortable with warming-up/vocalizing in front of other singers. (Pros = **3.09**;
Students = **2.92**)

The students also began to score themselves a little higher in this section, particularly in the following statements:

- I can listen to criticism and not react negatively. (Students = **4.13**; Pros = **3.68**)
- I'm vocally capable of singing my entire audition/competition repertoire in any order (i.e. strong vocal stamina). (Students = **4.04**; Pros= **3.85**)
- I'm confident that the repertoire I've chosen showcases my technical and artistic strengths. (Students = **4.21**; Pros = **4.00**)

The researcher hypothesizes that this is possibly a reflection of youthful confidence and bravado. Some of these students, specifically the undergraduate students, have yet to experience the more challenging encounters that come at a later stage of the singing career.

Throughout the three sections, there are a few instances in which the student group outscored the professional group, though only by a small margin. These higher student scores tended to occur in the audition/competition, recording session, and lesson/coaching scenarios. The researcher believes that the lower scores of the professional singers are due to the fact that a number of them have shifted into full time teaching, and are no longer auditioning/competing, recording, and regularly attending lessons/coachings. Some may have skipped the question all together, or decided to choose a lower scoring to indicate the infrequency of that scenario occurring within the current stage of their careers. Several of the professional participants had reached out privately via e-mail to the researcher explaining the difficulty they had in answering those specific questions. The researcher requested that they answer the questions hypothetically, imagining how they would respond if they were to find themselves in that particular scenario.

Nonetheless, the researcher has taken note of that difficulty, and will address that issue when developing similar research surveys in the future.

Quick Answer on Behaviour – Negative Statements

This next section features statements with a negative behavioural response. In this case, *a high average score would indicate a lower level of self-regulatory and mindfulness behaviour.*

Scanning through the weighted averages in Figure 23, one can see that the professional singers consistently scored *lower* than the student singers, suggesting that they are functioning at a *higher* level of self-regulation and Mindfulness than the student singers. This follows and supports the resulting pattern of the positive statements. The statements have again been classified under the same three categories – *General Self-Awareness/Mindfulness, Ability to Concentrate, Self-Confidence/Security in Vocal Skills.*

Under the *General Self-Awareness/Mindfulness* category, the student singers scored a section average of **3.07**, while the professional singers scored lower at **2.76**. Example negative statements in this section include:

- I'm distracted by how different my voice sounds in a new space.
- I'm worried that I cannot sense any technical improvement in my voice after I practice.
- I feel overwhelmed needing to memorize so much music.
- I'm overwhelmed by the increased tension in my body during an audition or competition.

QUICK ANSWER ON BEHAVIOUR - Negative Statements - Weighted Averages		
(1= Never, 2= Rarely, 3=Sometimes, 4=Often, 5=Always)		
General Self-Awareness/Mindfulness		
Section	Undergrad/Grad/Young Artist	Professionals (Teachers/Performers)
General Situations	3.17	2.97
Practice Studio	3.24	2.82
Lesson/Coaching	2.6	2.2
Rehearsal	3.32	3.11
Audition/Competition	3	2.71
Section Average	3.07	2.76
Ability to Concentrate		
Section	Undergrad/Grad/Young Artist	Professionals (Teachers/Performers)
General/Practice Studio	2.81	2.78
Lesson/Coaching	2.86	2.4
Rehearsal	2.83	2.62
Audition/Competition	3.47	3.33
Performance	3.08	2.99
Post-performance	2.73	2.57
Recording Session	2.75	2.58
Section Average	2.93	2.75
Self-Confidence/Security in Vocal Skills		
Section	Undergrad/Grad/Young Artist	Professionals (Teachers/Performers)
General Situations	2.87	2.6
Practice Studio	2.86	2.26
Lesson/Coaching	2.65	2.28
Rehearsal	2.74	2.38
Audition/Competition	3.22	2.91
Performance	2.8	2.41
Post-performance	2.33	2.24
Recording Session	3	2.65
Section Average	2.8	2.48

Figure 23: Quick Answer on Behaviour (Negative Averages)

Similarly, under the *Ability to Concentrate* category, the students scored higher than the professionals, scoring a section average of **2.93** versus **2.75**. Example negative statements in this section include:

- I worry about forgetting the words to my song/aria.
- While rehearsing, I start to think about tasks I need to complete outside of singing (e.g. chores, errands, etc.)
- I keep thinking about what I could have done better after I've finished an audition/competition.

The final category, *Self-Confidence/Security in Vocal Skills* also features higher student scores, with the students scoring a section average of **2.80** and the professionals scoring a section average of **2.48**. Example negative statements in this section include:

- I don't like listening to my voice on a recording
- In general, I'm not pleased with the way my voice sounds.
- I worry that my voice won't respond the way I want it to.
- I have a hard time motivating myself to practice.
- I worry about what my colleagues think of my voice.

On Strategies: Deliberate Practice

Once again, the participants were asked to score themselves on a matrix/rating scale from 1 to 5 ("never" to "always"). Each statement describes a specific deliberate strategy. There are no positive or negative traits assigned to these statements. A higher score is an indication that a

particular strategy is frequently utilized in vocal training. The popularity and frequent utilization of a strategy could also be an affirmative sign with regards to its effectiveness in learning.

This portion of the survey was divided into two sections - 1) General Deliberate Practice Strategies, 2) Mental Deliberate Practice Strategies. The results are shown in chart form in Figure 24.

It is immediately apparent that the section averages, for both General Deliberate Practice Strategies and Mental Deliberate Practice Strategies, are higher for the student singers. For the General section, students scored an overall average of **3.69**, where as the professionals scored **3.40**. For the Mental section, the students scored an overall average of **3.41** while the professionals scored **3.25**. Based on just these results, it would seem that the student singers more frequently utilize deliberate practice strategies than the professionals.

Under *General Deliberate Practice Strategies*, for General Situations, the professionals scored higher with a **4.01** average, and the students a **3.81** average. Questions within this section include:

- I pay attention to and regulate my breathing, to help reduce my anxiety level. (Pros = **4.11**; Students = **3.79**)
- I do stretches and body awareness exercises as part of my warm-up (e.g. yoga, Alexander Technique, etc.) (Pros = **3.85**; Students = **3.50**)
- I focus on setting a personal best, competing only with myself. (Pros= **3.79**; Students = **3.71**)

DELIBERATE PRACTICE STRATEGIES		
Weighted Averages		
(1 = Never, 2 = Rarely, 3 = Sometimes, 4 = Often, 5 = Always)		
Deliberate Practice Strategies - General		
Section	Undergrad/Grad/Young Artist	Professionals (Teachers/Performers)
General Situations	3.81	4.01
Practice Studio	3.4	3.28
Lesson/Coaching	3.84	3.18
Rehearsal	3.47	3.3
Audition/Competition	3.6	3.32
Performance	4.29	3.75
Post-performance	3.7	3.26
Recording Session	3.42	3.09
Section Average	3.69	3.4
Deliberate Practice Strategies - Mental		
Section	Undergrad/Grad/Young Artist	Professionals (Teachers/Performers)
General Situations	2.97	2.79
Practice Studio/Rehearsal	3.47	3.36
Lesson/Coaching	3.32	3.12
Audition/Competition/Performance	3.39	3.12
Post-performance	3.71	3.41
Recording Session	3.49	3.35
Section Average	3.41	3.25

Figure 24: Deliberate Practice Strategies (General and Mental)

Continuing with *General Deliberate Practice Strategies*, under the Practice Studio scenario, the students this time scored higher with an average of 3.40 versus the professionals' average of 3.28. Questions within this section include:

- I write down the specific goals I aim to achieve in my practice session. (Students = **2.46**; Professionals = **2.03**)

- I give myself a specific number of times to repeat an aria/song or a section of music. (Students= **2.21**; professionals = **1.91**)
- I write down thoughts about my singing and about how my voice feels during practice sessions. (Students = **1.67**; professionals = **1.56**)
- When learning/practicing a piece of music, I start at the beginning and work my way through to the end. (Students = **3.58**; professionals = **3.25**)
- When learning/practicing a piece of music, I start at the end of the piece, and work my way backwards to the beginning. (Students = **2.54**; professionals **2.63**)
- I speak the text of my aria/song - as if delivering a monologue. (Students = **3.75**; Pros = **3.77**).
- I practice a song/aria in sections, before putting the whole piece together. (Students = **4.13**; Pros = **4.24**)
- I record my practice sessions. (Students = **3.25**; professionals = **2.64**)
- I listen back to recordings of my singing to hear the quality of my voice (e.g. timbre, colour, consistency, etc.) (Students = **3.38**; professionals = **3.01**)

Analyses on these results are speculative on the part of the researcher. There are more scenarios to explore, but the researcher has chosen to narrow it down to these few interesting examples. The professionals seemed to be more familiar with and regularly subscribed to deliberate practice strategies that pertain to body awareness – regulation of breath and body stretches as part of their warm-up. In the *General* scenario, they scored higher than the student singers.

In the *Practice Studio* scenario, there are specific deliberate practice strategies in which the professionals did score marginally higher – speaking the text and practicing the music in

sections, and practicing/learning a piece of music starting from the end, working backwards to the beginning. Certain deliberate practice strategies in the *Practice Studio scenario* – writing down specific goals and journaling thoughts about singing - did not seem very popular with the professionals. In fact, the student singers scored themselves only a little bit higher with these strategies as well. Both the professionals and the students had average scores that landed between 1 and 2 = “never” to “rarely.” Recording practice sessions and listening back to them were strategies more frequently utilized by both groups, though still more popular with the student singers.

Moving on to *Mental Deliberate Practice Strategies*, the same two scenarios will be examined in more depth. For *General* situations, the students still scored higher with **2.97**. The professionals scored **2.79**. Questions within this section include:

- I replace/reword negative thoughts about my singing into positive ones. (Students = **3.08**; Pros = **3.00**)
- I use mental imagery to calm any anxiety or stress I may have before I sing (e.g. babbling brooks, warm sun on my face, etc.) (Students = **2.75**; Pros = **2.57**)

Within the *Practice Studio*, the students continued to score higher with an average of **3.41**, where as the professionals scored an average of **3.36**. Questions within this section include:

- Just before I sing through a song/aria, I take the time to rehearse the music in my mind (e.g. visualizing the text, the melodic phrases, the accompaniment, etc.) (Students = **3.88**; Pros = **3.54**)
- I imagine how technical vocal manoeuvres feel. (Students = **3.54**; Pros = **3.49**)

- I write down/record the imagery I use, so that I can evaluate the results. (Students = **2.17**; Pros = **1.80**)
- I mentally rehearse a challenging/problematic vocal skill in my head. (Students = **3.50**; Pros = **3.47**)
- I mentally visualize myself performing well. (Students = **3.71**; Pros = **3.47**)
- I imagine possible distractions, and practice refocusing my attention. (Students = **2.38** ; Pros = **2.15**)

All throughout the Mental Deliberate Practice section, the students continued to score just a bit higher than the professionals. It is interesting to note the strategies that are popular and frequently used by both students and professionals, such as imagining how vocal manoeuvres feel and mentally rehearsing a challenging/problematic skill in one's head. Writing down/recording imagery in order to evaluate the success of the results scored low, similar to the other strategies that involved some form of journaling. It would seem that taking the time to write down progress for later review, which is a form of self-feedback, is generally unpopular. Whether that has to do with the effectiveness of the strategy, or merely due to lack of patience with the process, requires further investigation.

Summary

The results of this survey presented some interesting patterns. The *Getting to Know You* and *Quick Answer on Behaviour* sections placed professionals at the forefront of self-awareness, self-regulatory and mindful behaviour. It would be expected that the professional group would likely have a higher level of expertise and experience with these concepts. Yet, the *Quick Answer on Deliberate Practice* sections, both general and mental strategies, had the students scoring just

slightly higher than the professionals. It would seem that the students are more frequently utilizing Deliberate Practice strategies. One could speculate that the student singers are at a stage in their career where they are driven by eagerness to learn and improve. The student singers might be more open minded to trying new approaches to vocal training, and have the firepower of youth to undergo trial and error. One could also attribute the industry of the students to the diligence of their teachers, constantly monitoring and encouraging these young singers to persist in these strategies. The students' more active engagement with Deliberate Practice might have a tenuous link with a behavioural pattern previously noted in the supporting literature. The example given was that newer drivers had better driving habits than more experienced drivers, who had slipped into habitual patterns of unawareness. This is not to say that experienced singers are less aware, in fact the survey results prove quite the opposite. It is worth considering that people who are newer to a discipline will tend to show more enthusiasm for the activity, and may exhibit a higher level of engagement.

Ultimately, these scores are a result of self-evaluation by all the participants, which are subjectively influenced by personal experience or lack thereof. Based solely on these survey results, there is no way to verify that these participants are consistently utilizing these strategies in their training. It is equally difficult to precisely evaluate the effectiveness of these strategies. Further research is required, and most likely will necessitate interviews and observations of lessons and practice sessions to acquire more in-depth and accurate information.

The survey has successfully demonstrated that the concepts of Mindfulness and Self-Regulation/Deliberate Practice are not foreign to the singers who participated in this research project. Many of the participants have expressed their interest, support and utilization of these concepts, which strengthens the need for research in this area. The survey was successful in

acquiring meaningful data that allowed for comparisons between student and professional singers. Interesting commonalities and differences in behavioural patterns and perspectives arose, setting up a foundation of knowledge to build upon. The depth of classical singers' engagement with these concepts and the resulting effectiveness in the training of classical singing requires further exploration, providing exciting opportunities for future research.

CONCLUSION

Reviewing Concepts

Mindfulness and *Self-Regulation*, while still being further explored in academic research, are already being implemented into various fields of work. The mainstream culture has also picked up on these concepts, generating a new social trend with the production and dissemination of a number of mindfulness-based self-help books, magazines and products to the public. As a result, most people will likely have a general idea of what these concepts are and will be drawn to the benefits of engaging with these practices. However, the effectiveness of mindfulness and self-regulation is wholly dependent on a person's clear understanding of the concepts, and on his dedication to the process of applying these principles.

This paper begins with a theoretical model - a comprehensive flow chart that helps define the concepts and depict the process of engaging with mindfulness and self-regulation.

Mindfulness Stage One draws from the work of Jon Kabat-Zinn, and involves the practice of mindfulness meditation as the first step to developing self-awareness. Through mindfulness meditation, a person can determine their level of concentration by noticing how frequently distracting thoughts pull their attention away from their breath. The challenge lies in calmly acknowledging these thoughts, and then bringing the focus back to one's breathing, doing this as often as needed, and slowly building one's focus and self-awareness.

Flow and *Optimal Experience* are the defining elements of Mindfulness Stage Two.

Flow is a highly focused mental state conducive to productivity which allows for the opportunity to encounter an optimal experience – the energized yet effortless performance of a task. A sense of flowing or floating is used to describe the experience of what is essentially efficient coordination between the mind and body - intention and action. In the flow chart, Mindfulness stage two has been placed at the end of the chart, recognized as the ultimate goal for many if not all people.

In the practice of mindfulness, one does not miraculously leap from stage one to stage two. People must engage in self-regulatory practices in order to gradually transition from mindfulness stage one to mindfulness stage two. This involves the setting of realistic and specific goals and sub-goals, seeking and acquiring feedback (from trusted mentors, colleagues, self-reflective exercises, etc.) and stepping just outside of one's comfort zone – raising the stakes to push the mind and body to continually learn.

Deliberate practice, built on the key concepts of self-regulation, is a methodical approach to practice and training exhibited by experts in various disciplines and fields. What experts have accomplished throughout their successful training is deliberately mapping out detailed mental representations (mental concepts) of their physical tasks. This strengthens the coordinative connection between the mind and body, setting up the conditions for a *flow* state of mind, and increasing the chances of encountering optimal experiences.

Addressing Research Objectives

Building on Survey Analysis

Within the fields of classical vocal performance and pedagogy, the practices of mindfulness and self-regulation have been explored, utilized and encouraged by vocal pedagogy researchers. Some of the existing key strategies and concepts have been collated and outlined in the *Applications to Classical Voice* section within this paper's Literature Review. There is a healthy body of literature available to any singer who wishes to enhance their vocal training and performance through these practices.

One of the main objectives of this dissertation was to acquire information from current professional singers and voice students, to determine whether or not mindfulness and self-regulation practices were already being consistently incorporated in vocal training methods and performance approaches.

Based on the survey results from this research project, the researchers confirm that the singer participants are familiar with and do apply *some* mindfulness and self-regulatory concepts and strategies to their practice of singing. However, the researcher believes that these participants (and singers in general) could benefit from a deeper understanding of these concepts, leading to more structured and focused practice and more consistent and efficient performance.

The researcher was successful in acquiring a comprehensive data set, as well as more personalized answers and opinions from the singer participants. Many singers responded with great interest in the survey, particularly those in the professional stages of their career. A significantly smaller group of student singers completed the survey, but there were still enough responses to garner substantial results. The participants were asked to classify themselves into specific singer categories (i.e., undergraduate student singer, advanced/graduate student singers,

young professional, professional performer, and voice teacher). However, they were only divided into two main groups – student singers and professional singers – for the calculation of the results. More accurate results may have been obtained if the survey had addressed individualized questions to specific singer categories. This would have made the survey far too extensive and outside the realistic manageability of accomplishing this research project. What this project has managed to achieve is to present an overview of comparisons between the behavioural patterns of student singers and professional singers in various singing scenarios. It could potentially serve as a basis for future research that zeroes in on a specific category of singers.

Several of the participants responded positively to the questions regarding mindfulness meditation. The survey results indicate that in general, professional singers more frequently meditated in their practice routines. Most of the student singers have tried meditation, but were unsuccessful in sustaining the activity. One could surmise this has to do with the level of maturity. Age and experience most likely do play a factor. However, there were responses from both the student and professional groups that reflected a surface-level understanding of what mindfulness meditation entails. People often relate meditation to the desirable results of reducing stress levels and anxiety. It is frequently perceived as a passive exercise, when it actually involves a conscious commitment and deliberate attempt to maintain focus for an extended period of time. The ability to concentrate requires practice in itself. It would seem that most people's first introduction to the concept of mindfulness is through meditation. However, few go beyond mindfulness stage one to experience the core elements of mindfulness stage two – the flow mental state and optimal experience.

The participants were asked “Quick Answer” questions regarding their use of a number of self-regulatory deliberate practices strategies (general strategies and mental practice strategies)

within their vocal training and maintenance. When it came to exercises that involved breath and body awareness, the professionals scored higher than the students. However, throughout the rest of this survey section, the students continued to score just marginally higher than the professionals in most of the deliberate practice strategies suggested. It has been considered that the eager desire of student singers to improve has prompted more engagement with deliberate practice, therefore resulting in the slightly higher scores. However, the researcher must acknowledge that these scores are most likely a reflection of some of the survey's limitations in being able to address the specific singer categories. Many of the participants in the professional group are singers who have shifted completely into teaching voice, and have retired from the stage. A few of these voice teachers reached out to the researcher expressing their concern that the survey questions were more directed at student singers and professionals who were in the midst of a performance career. These participants were encouraged to answer from a more hypothetical standpoint, and to draw from their past experiences in answering these questions. However, the researcher believes that many of these participants may have selected a lower score to indicate that they were no longer performing or practicing as often, or may have skipped answering some of these questions all together. Therefore the researcher must admit that the resulting calculations are not as accurate as they could be. Despite the inaccuracies, the results exhibit a moderate level of engagement with deliberate practice strategies for both the student and professional singers.

Interestingly, the specific deliberate practice strategies that scored the lowest were ones that involved acquiring feedback through journaling and listening back to self-recordings. Both students and professionals scored lower in these feedback strategies. The process of writing down one's thoughts about singing (e.g., practice session goals, reflections on vocal quality and

sensation, post performance reflections, etc.) does not seem to be a popular activity amongst singers in general. Seeking feedback is one of the core elements of self-regulation. Without appropriate feedback, a person will not be able to accurately gauge what particular aspects of his performance need more attention in order to improve. There are certainly other ways of acquiring feedback. Students mostly rely on their voice teacher and coach for feedback on their vocal performance. External feedback is invaluable, but it needs to be combined with the detailed speculation and personal knowledge that self-reflection and self-regulation offers. It is admittedly difficult to face and acknowledge one's weaknesses. For singers, there is an even deeper level of vulnerability in that one personally identifies with one's voice. Yet it takes awareness of these very limitations in order to set precise goals, and to healthily push oneself outside of one's comfort zone. In fact, facing less than desirable feedback is already a form of stepping outside of one's comfort zone. If these self-regulatory methods are consistently used to acquire regular "self feedback," it could aid a student in discovering healthier and more efficient ways of practicing, perhaps increasing their rate of improvement, helping them to bridge the gap to professionalism and expertise. Although the results of this survey indicate that the majority of this group of professionals are also not utilizing these feedback methods it does not mean that these methods are ineffective, or that the professionals could not benefit from it as well. It would be interesting to see what new heights of vocal performance could possibly be achieved if a professional performer chooses to incorporate these self-regulatory feedback methods into her practice routine.

Future Research

This dissertation presents an overview of this particular group of singers' familiarity with and practice of mindfulness and self-regulatory concepts and strategies. Through the acquired data set combined with the written answers submitted by the singers, interesting behavioural patterns arose that highlighted the commonalities and differences between student singers and professional singers. Upon analyzing the results, it became clear that a survey alone would not be able to conclusively determine just how effective the suggested mindfulness and self-regulatory practices would be. More accurate and in-depth data can only be obtained through directly observing a singer's implementation of these concepts into her regular practice routine. Such a research project will require a dedicated group of participants, singers at varying levels of experience and stages in their career. These participants must be willing to commit to the research project for an extended period of time, comfortable enough with being observed while practicing, and eager to experiment with mindfulness and self-regulation applications. They must also be prepared to self-reflect and share details of their experiences through regular interviews with the researcher, in order to provide context for the researcher's observations.

Attempting to build on existing strategies was another objective of this dissertation. It was noted earlier in this paper that student and professional singers have turned to technology, specifically phone apps, to aid them in meditation. Smart phone technology has become an inextricable part of everyday living and convenience. Current student singers, who are a part of Generation Z, are most likely highly reliant on their phones, having never experienced a time period without this technology. Perhaps it is worth investigating how smart phone apps can be developed to actually help singers self-regulate their vocal training and track their progress. A number of creative phone apps could be invented, such as a tool that encourages a singer to

record themselves and then to listen for immediate feedback and self-reflection. The app could also include a program that prompts a singer to answer questions and self-reflect. If the app kept a record of all of the singer's notes and log entries, she would be able to review and track her personal vocal development. Since some singers seem to be averse to the traditional approach of writing down their thoughts in a journal, perhaps they might be more inclined to self-reflect and self-regulate through typing or speaking into a phone app. This is not to say that a phone app can teach a person how to properly sing. There are actually phone apps currently available for download that claim to do just that. A real "human" voice teacher is necessary for the training and guidance of the human vocal instrument. The phone app should only be seen as a complementary training tool. As the COVID-19 pandemic continues to loom over the world, connection and communication through technology becomes increasingly important. Musicians and performance companies are struggling to find new ways to reach audiences through online formats. It is a likely reality that more technological training tools will need to be developed in order to help sustain and motivate musicians in their training activities.

Technology is deeply woven into today's culture. There are a myriad of benefits to having constant access to this technology, but researchers have also linked constant screen exposure to the deterioration of concentration and an increase in demand for instant gratification. When people are "habitually unaware," they can easily succumb to the mind-numbing effects of a smart phone, and often continue to allow thoughts to wander aimlessly when not looking at a screen. Ultimately, it is up to each person to take responsibility for their own behaviour. Realizing one's own level of awareness is a first step on the road to mindfulness. This research project has shown that the majority of the singer participants were familiar with the concepts of mindfulness and self-regulation at a basic level, and most of them show genuine interest in

applying these concepts to their singing. Based on the survey results, the researcher believes that, overall, singers could benefit from a deeper understanding of these concepts, leading to more detailed and immersive applications to vocal practice and performance. The information garnered through this dissertation will potentially provide a foundation for future research projects, furthering the exploration and application of mindfulness and self-regulation in classical singing.

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APPENDIX A: PARTICIPANT RECRUITMENT LETTER

Dear _____,

My name is Vania Chan. I'm a Doctor of Philosophy (PhD) Candidate in the Graduate Program in Music at York University.

I am conducting a study on **mindfulness and self-regulation in classical singing**.

- **Mindfulness** is about bringing one's mind back to the present moment, and purposefully paying attention without judgement.
- **Self-regulation** is the ability to understand and to control one's own learning environment.

The goal of this research is to discover, enhance, and develop strategies that could encourage mindfulness in singing and growth of efficient learning skills. These strategies have the potential to directly benefit singers of every level, promoting the development of an overall healthier mind and voice.

I intend to publish the research results, and to share them with the entire singing community, especially with the singers who contribute their time and participate in this project.

Would you be interested in taking part in a comprehensive survey? As a student singer/performer, your perspective on vocal training and on the prospects of a singing career would be of great value to this project. The estimated time to complete the survey should be within 45 to 50 minutes in one sitting. You have the option to take breaks and do the survey in sections. Participation is completely voluntary. You will remain anonymous, and all the information you supply will be held in confidence.

A separate SurveyMonkey e-mail containing a private link to the survey has been sent to you. If you are interested in participating, you will be able to access the survey through that e-mail.

Please check your spam folder if you do not see the SurveyMonkey e-mail in your inbox.

Thank you for your time and consideration.

Vania Chan

Doctor of Philosophy (PhD) Candidate, Principal Investigator
Graduate Program in Music, York University

APPENDIX B: COMPLETE SURVEY

Online Informed Consent Form

Study Name:

Mindful Singing: Exploring Mindfulness and Self-Regulation in Classical Singing

Researcher Name:

Vania Chan (Principal Investigator/Researcher)
Graduate Program in Music, Doctor of Philosophy (PhD) Candidate
York University

Purpose of the Research

1. This dissertation/research project focuses on mindfulness and self-regulation in classical voice practice.

A distracted mind is a mind that lacks organization of thought. Mindfulness is about bringing one's mind back to the present moment. It's about purposefully paying attention without judgment.

Self-regulation abilities include goal-setting, self-monitoring, self-instruction, and self-reinforcement. It refers to one's ability to understand and to control one's own learning environment.

Self-regulation abilities and strategies could encourage the development of mindfulness in singers of every level, particularly university voice students, possibly leading to a more effective and healthy learning experience. *The research seeks to determine if self-regulation skills and strategies can play a significant role in the improvement of vocal skill in classical singing.*

2. The research data will be collected through online surveys. The researcher will analyze and draw patterns and conclusions from the survey.
3. The research results will be presented through a dissertation paper and defence. The results may also be used for conference presentations and submitted as an academic paper for publication.

What you will be asked to do in the research

4. **Survey:** As a participant you are required to complete the following online survey.

The survey consists of 3 sections: 1) “Getting to Know Yourself” – a series of introductory questions, 2) “Quick Answer on Behaviour”, 3) “Quick Answer on Strategies”. The quick answer sections.... are set up as a matrix/rating scale (ranging from 1 = never, to 5 = always). Select the answer that is most apt. Go with your first instinct.

The estimated time to complete the survey should be within 45 to 50 minutes in one sitting. You have the option of taking a pause, and resuming the survey where you left off. Please note that once you have completed and submitted a page of the survey, you will not be able to go back and edit your answers.

Risks and Discomforts

5. The researcher does not foresee any risks or discomforts from your participation in the research.

Benefits of the Research and Benefits to You

6. This dissertation/research project intends to explore and collate existing mindfulness and self-regulation strategies. The researcher intends to build on these existing strategies, either enhancing them, or developing and suggesting new tactics that could encourage mindfulness in singing and growth of efficient learning skills. The researcher would like to share this information with the participants and the entire singing community. These mindfulness and self-regulation strategies have the potential to directly benefit singers of every level and style, promoting the development of an overall healthier mind and voice.
7. Mindfulness and self-regulation are concepts that were developed within the fields of psychology and education. This research project has taken these concepts and placed them within the context of classical voice practice and performance for singers. The learning strategies developed and highlighted in this research could be reapplied to other disciplines.

Voluntary Participation and Withdrawal

8. Your participation in the study is completely voluntary and you may choose to stop participating at any time. Your decision not to volunteer, to stop participating, or to refuse to answer particular questions will not influence the nature of the ongoing relationship you may have with the researchers or study staff, or the nature of your relationship with York University either now, or in the future.

9. In the event you withdraw from the study, all associated data collected will be immediately destroyed wherever possible – hardcopies will be shredded and electronic files deleted. Should you wish to withdraw after the study, you will have the option to withdraw your data up until the analysis is complete.

Confidentiality

10. All information you supply during the research will be held in confidence. All participants will remain anonymous. Your name will not appear in any report or publication of the research. To ensure anonymization, each participant will be sent, via e-mail, a unique participant link to the survey. Once received, each of the surveys will be stripped of their e-mail identification, and given a numeric code. Research and analysis will be conducted using the numerically codified surveys. Your data will be safely stored in a locked facility and only the principal investigator and her supervisor will have access to this information. Confidentiality will be provided to the fullest extent possible by the law.
11. Listed below are the methods of documentation:
 - Answered surveys (both electronic and hardcopy versions)
 - Consent forms (both electronic and hardcopy versions)
12. Listed below are the methods of storage:
 - *Electronic data* – electronic copies of surveys, consent forms, and other possible electronic records, will be stored safely and protected in an encrypted and password-protected USB and computer.
 - *Hardcopy data* – hardcopies of answered surveys, consent forms, and other possible hardcopy records, will be stored safely and protected in a locked filing cabinet.
13. All data obtained from this project will be retained indefinitely. The resulting information garnered from this dissertation will potentially serve as a foundation for future research. The mindful/self-regulating practicing tools and strategies collected and/or developed from the results of this dissertation, will require practical application and testing within the studio setting. This sets the premise for further research.
14. The data collected in this research project may be used – in an anonymized form – by the researcher in subsequent research investigations exploring similar lines of inquiry. Such projects will still undergo ethics review by the Human Participants Review Sub-Committee (HPRC), and the institutional Review Ethics Board (REB). Any secondary use of anonymized data by the researcher will be treated with the same degree of confidentiality and anonymity as in the original research project.
15. The researcher acknowledges that the host of the online survey (i.e. Survey Monkey) may automatically collect participant data without their knowledge (i.e., IP addresses). Although this information may be provided or made accessible to the researcher, it will

not be used or saved without the participant's consent on the researcher's system. Further, because this project employs e-based collection techniques, data may be subject to access by third parties as a result of various security legislation now in place in many countries. *Thus, the confidentiality and privacy of data cannot be guaranteed during web-based transmission.*

Questions about the Research

16. If you have any questions about the research in general or about your role in the study, please feel free to contact me. You may also contact my supervisor, Catherine Robbin or contact the York University Graduate Program in Music.
17. This research has received ethics review and approval by the Delegated Ethics Review Committee, which is delegated authority to review research ethics protocols by the Human Participants Review Sub-Committee, York University's Ethics Review Board, and conforms to the standards of the Canada Tri-Council Research Ethics guidelines. If you have any questions about this process or about your rights as a participant in the study, please contact the Sr. Manager & Policy Advisor for the Office of Research Ethics.

Legal Rights and Consent

By check-marking this box, I consent to participate in the survey for *Mindful Singing: Exploring Mindfulness and Self-Regulation in Classical Singing*. I have understood the nature of this project and wish to participate. I am not waiving any of my legal rights by consenting through this form.

- I consent to participate in the following survey.

SECTION ONE – Getting to Know Yourself

Instructions:

Read through each question carefully. Select the answer that you feel best applies to you. For written answers, write down whatever first comes to mind. Don't spend too much time re-thinking and editing. The goal is to answer as honestly as possible, and to trust your initial instinct. Move through the questions at a steady pace. (Please note: Once you have submitted a page of answers, you will not be able to go back to that submitted page to edit your responses.)

1. What age group do you fall into?

- 18 – 24
- 25 – 34
- 35 – 44
- 45 – 54
- 55 – 64
- 65 +

2. As a singer, which category would you fall into? (Check all that applies.)

- Student Singer (Undergraduate Level)
- Advanced Student Singer (Graduate Level)
- Young Artist (pre-professional, taking part in young artist programs)
- Professional Singer (paid to perform, possibly part of a union)
- Voice Teacher (private studio/university level)

3. What is your voice type? Select the option that best describes your voice.

- Soprano
- Mezzo-Soprano
- Alto/Contralto
- Counter-Tenor
- Tenor
- Baritone
- Bass
- Undergoing voice type change or transition
- Other (please specify) _____

4. How often do you practice?

- Every day of the week
- 5 to 6 times a week
- 3 to 4 times a week
- Twice a week
- Once a week
- Whenever I feel like it
- Other (please specify) _____

5. Approximately how long is your average practice session?

- 2 ½ or more hours
- 2 hours
- 1 to 1 ½ hours
- Half an hour
- However long I feel like it
- Other (please specify) _____

6. Approximately how long do you warm-up?

- 10 – 15 min
- 15 – 30 min
- 30 – 45 min
- 1 hour
- It varies – depending on what my voice needs
- I don't keep track of time
- Other (please specify) _____

7. Please briefly describe your standard vocal warm-up procedure. Be as specific as you can. (Point form answers are welcome.)

8. Imagine you are just about to sing. What are the first 3 things that come to mind? (It could be anything). Write it down:

1. _____
2. _____
3. _____

9. What eras/styles of vocal music do you sing (e.g. Baroque, Romantic, Contemporary, etc.)?

10. Of the eras/styles that you listed above, which do you enjoy singing the most?

Answer: _____

11. Describe what you would consider an incredibly difficult piece of music. List what elements that piece of music would include:

12. How long do you think it would take you to learn a piece of music you consider incredibly difficult?

- Less than a week
- 1 week
- 1 and ½ weeks
- 2 weeks
- 2 ½ weeks
- 3 weeks
- 3 weeks +

13. What is your process of learning a new and difficult piece of music? Break it down into about 5 steps:

- (1) _____
- (2) _____
- (3) _____
- (4) _____
- (5) _____

Extra things to add: _____

14. Rate the strength of your **visual** learning (10 = very strong).

1 2 3 4 5 6 7 8 9 10
Very Strong

15. Rate the strength of your **auditory** learning (10 = very strong).

1 2 3 4 5 6 7 8 9 10
Very Strong

16. Rate the strength of your **physical/kinaesthetic** learning (10 = very strong).

(Kinaesthetic: Relating to a person's awareness of the position and movement of the parts of the body by means of sensory organs, "proprioceptors", in the muscles and joints.)

1 2 3 4 5 6 7 8 9 10
Very Strong

17. Rate the strength of your **verbal** learning (10 = very strong).

1 2 3 4 5 6 7 8 9 10
Very Strong

18. What do you think is your strongest sense? Rank your senses, in order of strength below (1 = strongest, 6 = weakest) :

Sight _____

Sound _____

29. If you were attempting to sing a melody line in the dynamic “pianissimo”, what descriptive **words/images** could you think to help you achieve that vocal effect? List them below:

30. If you were attempting to sing a “legato” line, what **words/images** could you think to help you achieve that vocal effect? List them below:

31. On a scale of 1 to 10, how would you rate the consistency of your overall vocal technique?

Inconsistent.....Consistent.....Very Consistent
1 2 3 4 5 6 7 8 9 10

32. How would you describe vocal consistency? Write a couple of sentences, or list words that come to mind when you think of vocal consistency. (Point form answers are welcome.)

33. On a scale of 1 to 10, how would you rate your level of performance (i.e. performing in front of an audience)?

Poor.....Adequate.....Good.....Excellent
1 2 3 4 5 6 7 8 9 10

38. Practicing in “performance mode” means you are rehearsing your repertoire the way you intend to perform it in front of a live audience (i.e. presenting a finished and polished product.) How long a period of time do you need, practicing in “performance mode”, before you feel absolutely ready to perform in front of a live audience?

- 1 week
- 2 weeks
- 3 weeks
- 1 month
- 1 month +

SECTION TWO: Quick Answer on Behaviour

Self-Awareness/Mindfulness

General (applicable to multiple situations)

39. I pay attention to my breath and body when I sing.

1	2	3	4	5
Never	Rarely	Sometimes	Often	Always

(**Note:** The rest of the statements will have the same rating scale as the above example. For now, they will simply be listed for ease of reading.)

- 40. I’m unsure if my voice is sufficiently warmed up.
- 41. I notice tension in my body and how it affects my voice.
- 42. I’m distracted by how different my voice sounds in a new space.
- 43. I observe how my body and voice feels each day; especially on a performance day.
- 44. I pay attention to my surroundings.
- 45. I’m frustrated when things don’t go according to plan.
- 46. I’m aware of the kinds of distractions that draw my attention.
- 47. I suddenly realize that my voice feels tired and over-worked.
- 48. I’m aware of the moments/places in the music where I lost my concentration.

Practice Studio

- 49. After a practice session, I know what I need to work on and the steps to take.
- 50. I’m worried that I cannot sense any technical improvement in my voice after I practice.
- 51. I know the plot, the setting, and who my character is in an opera/art song.
- 52. I’ve lost count on how many times I’ve repeated a song/aria or a section of music.
- 53. I’m aware of how long I can focus before becoming distracted.
- 54. I feel overwhelmed needing to memorize so much music.

Lesson/Coaching

- 55. I can objectively describe how my voice feels to my mentor.
- 56. My mind often drifts to other things during a lesson.
- 57. I'm aware of improvement in my voice during a lesson.
- 58. I worry that I don't understand what my mentor is asking of me.

Rehearsal

- 59. I observe how other people interact with each other at rehearsal.
- 60. I avoid some of my colleagues because their behaviour bothers me.
- 61. After rehearsal, I'm aware of what I need to work on and the steps to take.

Audition/Competition

- 62. I calmly observe my audition/competition environment (e.g. size of room, number of people in panel, etc.).
- 63. I'm overwhelmed by the increased tension in my body.

Performance

- 64. I calmly observe my performance environment (e.g. backstage, onstage, the energy of the audience/colleagues, etc.).

Post-performance

- 65. I can sense if my voice/body feels fatigued and requires rest after a performance/run of shows.

Recording Session (official recording session, not a practice session/rehearsal)

- 66. I'm aware of an increase in self-consciousness when I'm being recorded.

Ability to Concentrate

Practice Studio/General (applies to multiple situations)

- 67. I can concentrate on sensations in my body (i.e. vibrations in my head, chest, etc.).
- 68. I worry about running out of breath.
- 69. I worry about taking extra breaths.
- 70. I can move past mistakes and sing through to the end of a piece of music without stopping.
- 71. I'm thinking about the next high note.
- 72. I focus on the present moment.
- 73. I worry about forgetting the words to my song/aria.
- 74. If I get distracted I can bring my attention back to my singing/present task at hand.
- 75. I react negatively when a distraction breaks my concentration during practice.

Lesson/Coaching

- 76. I can tune out ambient sounds during my lesson (e.g. other people practicing, people talking loudly, etc.).
- 77. I'm distracted by how my mentor responds to my singing (e.g. facial expressions, comments).
- 78. When I stop, or my mentor stops me in the middle of singing a piece of music, I find it difficult to refocus and start again.
- 79. While singing a piece of music, I think about what my mentor is going to say.

Rehearsal

- 80. I can focus on what I have to do, and not get distracted by my colleagues.
- 81. While rehearsing, I start to think about tasks I need to complete outside of singing (e.g. chores, errands, etc.)
- 82. If my scene partner or my pianist/accompanist makes a mistake, I stay focused on my singing, and keep moving forward.

Audition/Competition

- 83. I get distracted when I hear other singers auditioning.
- 84. If I made a mistake in one piece, I can move past negative thoughts and emotions, and start fresh on my next piece.
- 85. I notice and worry when the audition panel doesn't seem interested in my singing.
- 86. I keep thinking about what I could have done better after I've finished an audition/competition.

Performance

- 87. I am focused and ready to look at the conductor for specific cues.
- 88. I'm thinking about my next entry while waiting for my colleague to finish singing his/her line.
- 89. I can channel my nerves and adrenaline into focused energy, and use it for performance.
- 90. I'm comparing my performances, worrying that my current performance is not going as well as my last performance.
- 91. I remember all my responsibilities and the tasks I need to do while on stage (i.e. balancing vocal technique, drama, blocking, prop handling, etc.).
- 92. I notice and worry when an audience isn't responding the way I hoped they would (e.g. the applause after my aria/song wasn't as long as I had expected).

Post-performance

- 93. I can focus on the good points of my finished performance, and move forward to the next challenge.
- 94. After a performance or run of shows, I have difficulty concentrating on daily tasks and routines that don't involve singing.
- 95. I immediately want to return to the practice room and fix my mistakes.

Recording Session (official recording session, not a practice session/rehearsal)

- 96. I trust that my voice and technique will perform consistently.
- 97. The presence of the microphone and other equipment is making me change the way I sing.

Self-Confidence/Security in vocal skills (connected to motivation and preparation)

General (applicable to multiple situations)

- 98. I'm confident that I know the lyrics of the aria/song, and understand its meaning.
- 99. I don't like listening to my voice on a recording.
- 100. In general, I'm not pleased with the way my voice sounds.
- 101. I don't like watching myself perform on a video recording.
- 102. I know the word for word translation and meaning of an aria/song in a different language.
- 103. I worry that my voice won't respond the way I want it to.
- 104. Every time I sing, I worry about hurting my voice.
- 105. I dislike my voice, and I criticize and scold myself for not singing well.
- 106. In general, I'm usually satisfied with my performance.
- 107. I can't seem to achieve the goals and standards that I set for myself.
- 108. I don't enjoy singing as much as I used to.
- 109. I can listen to criticism and not react negatively.
- 110. I can't explain why I'm not singing and/or performing consistently.
- 111. I experience mood swings for no apparent reason.

Practice Studio

- 112. I look forward to and enjoy practicing
- 113. I feel anxious and worry that I won't sing well in my practice session
- 114. I know myself and trust my practicing process.
- 115. I am easily discouraged when I can't immediately fix a vocal technical issue.
- 116. I feel I have accomplished something after a practice session.
- 117. I have a hard time motivating myself to practice.
- 118. I'm aware of the positive qualities of my voice while I'm singing.
- 119. I have a lot of negative thoughts about my singing/voice while I practice.
- 120. I need immediate feedback from my mentor, or a trusted friend/colleague.
- 121. After a practice session, I feel like I've done the best that I can that day.
- 122. I need my teacher to help me properly warm up my voice.

Lesson/Coaching

- 123. I feel inspired to work with my mentor.
- 124. I'm overwhelmed by the technical/ musical flaws that my mentor points out.
- 125. I look forward to my voice lessons/coaching.
- 126. I'm reluctant to try my mentor's suggestions.
- 127. I'm open to suggestions from my mentor and willing to try his/her solutions.
- 128. After my lesson/coaching, I feel overwhelmed and unsure about my voice.
- 129. I can have open discussions about a singing career with my mentor.
- 130. I want to please my mentor, and get him/her to say positive things about my singing.
- 131. After my lesson/coaching, I'm already planning what I'd like to cover in my next session
- 132. I feel like it's taking too long for my technique to improve.

Rehearsal

- 133. I enjoy rehearsing/working with my colleagues.
- 134. I try to avoid watching/listening to other singers/colleagues perform.
- 135. I feel like I'm not as prepared as other people in my cast.
- 136. I communicate openly with my colleagues and encourage teamwork.
- 137. I worry about what my colleagues think of my voice.
- 138. I have a hard time remembering my staging/blocking.
- 139. I'm motivated to sing with colleagues who are performing at a high level.
- 140. I'm discouraged and feel incompetent when the director/conductor points out an issue that needs adjustment/correction.
- 141. I take responsibility for my vocal part, and work in partnership with my colleagues.
- 142. I have difficulty saying no, or disagreeing with a person that I'm working with.
- 143. I'm comfortable with warming-up/vocalizing in front of other singers.
- 144. When I hear other singers warming up, I get distracted and start comparing myself to other singers.

Audition/Competition

- 145. I try to engage in brief friendly chats with other singers in a competitive setting.
- 146. When I make a mistake in an audition/competition, I keep thinking about the mistake through the rest of my program.
- 147. I'm prepared and ready to sing as best as I can for the audition/competition panel.
- 148. I'm still worried about one or more of the arias/songs in my audition/competition repertoire.
- 149. I'm vocally capable of singing my entire audition/competition repertoire in any order (i.e. strong vocal stamina).

150. If I hear another singer performing the aria/song that I'm singing, I make comparisons and worry about my chances of success.
151. I'm confident that the repertoire I've chosen showcases my technical and artistic strengths.
152. I'm overwhelmed by nerves and anxiety in a competitive environment.
153. I'm confident that my opening piece shows me off to my best advantage.
154. While I'm singing, I'm concerned about what the audition panel is thinking.
155. During an audition/competition I trust that my voice will perform consistently.
156. I don't feel like I've sung my best after an audition/competition.
157. I enjoy the challenge and learning experience of singing at auditions/competitions.
158. I question my abilities after an audition/competition.

Performance

159. I enjoy performing in front of a live audience.
160. I'm overwhelmed by nerves and anxiety just before a performance.
161. I feel prepared and ready to sing as best as I can for each performance.
162. I worry about critics in the audience.
163. I'm glad to have my family and friends in the audience.
164. I worry about what the audience in general will think.
165. I can calm my nerves and anxiety once I'm in the middle of a performance.
166. I worry about my teachers in the audience.
167. In a venue with a "dry" acoustic (i.e. lack of acoustic feedback to the singer's ears), I become very worried about how my voice will project in the space.

Post-performance

168. After a performance/run of shows, I feel more confident in myself as a performer.
169. When a person compliments me, I respond by pointing out a mistake that I made.
170. I question my singing abilities right after I finish a performance.
171. After a performance or a run of shows (especially a successful run), I feel elated/overjoyed.
172. After a performance or a run of shows (either successful or not as successful as hoped), I feel depressed/sad.
173. After a performance or a run of shows (either successful or not as successful as hoped), I feel angry at myself and/or others.
174. After I finish a show, I'm already planning and preparing for the next show.
175. I avoid reviewing audio/video recordings of my performances.
176. I avoid reading reviews of the show.
177. I objectively reflect and try to learn from less than successful performances.

Recording Sessions (official recording session, not a practice session/rehearsal)

- 178. I'm worried about what the recording engineer thinks of my voice.
- 179. I find my voice is not performing the way I want it to during a recording session.
- 180. I find ways to energize my body and voice for the recording.
- 181. I worry about making mistakes in a recording.
- 182. I let go of small imperfections, and am content with the best recording of my voice.

SECTION THREE: Quick Answer on Strategies

“Deliberate” Practice Strategies

General (applicable to multiple situations)

- 183. I pay attention to and regulate my breathing, to help reduce my anxiety level.

1	2	3	4	5
Never	Rarely	Sometimes	Often	Always

(**Note:** The rest of the statements will have the same rating scale as the above example. For now, they will simply be listed for ease of reading.)

- 184. I do stretches and body awareness exercises as part of my warm-up (e.g. yoga, Alexander Technique, etc.).
- 185. I warm up my voice using a consistent set of exercises/vocalises.
- 186. I focus on setting a personal best, competing only with myself.

Practice Studio

- 187. I set specific goals for what I'd like to achieve in my practice session (e.g. Today, I will practice the last three pages of this aria).
- 188. I write down the specific goals I aim to achieve in my practice session.
- 189. I give myself a specific number of times to repeat an aria/song or a section of music.
- 190. I experiment and try different approaches when working on a specific vocal technique (e.g. coloratura runs).
- 191. I write down thoughts about my singing and about how my voice feels during practice sessions.
- 192. I write down thoughts about my singing and about how my voice feels after practice sessions.
- 193. I record my practice sessions.
- 194. I listen back to recordings of my singing to hear the quality of my voice (e.g. timbre, colour, consistency, etc.).
- 195. I listen back to my recordings to learn/review my musical cues and entries.
- 196. I listen back to my recordings to help me memorize my music.

197. I watch video recordings of myself singing to gauge my overall performance.
198. I speak the text of my aria/song-as if delivering a monologue.
199. If in a different language, I speak the text and translation of the aria/song, just before I sing.
200. I review the text of my song/aria by writing it out on paper.
201. I listen to recordings of other singers performing a song/aria that I'm working on.
202. While reading the score, I listen to recordings of a song/aria that I'm working on.
203. I practice vocal technique separately from artistic interpretation.
204. I practice vocal technique and artistic interpretation in tandem (together).
205. I sing through a song/aria from beginning to end without stopping.
206. I practice a song/aria in sections, before putting the whole piece together.
207. In a single practice session, I focus on one technical challenge until I feel I have made some improvement on it. (E.g. approaching a high note/sustaining a high note.)
208. I circle sections in my score that I'd like to return to later for review.
209. When learning/practicing a piece of music, I start at the beginning and work my way through to the end.
210. When learning/practicing a piece of music, I start at the end of the piece, and work my backwards to the beginning.
211. I research and analyze my character and the circumstances of the plot in a musical drama.
212. I analyze the composer's intentions (i.e. explore why he chose to write the music a certain way).
213. I analyze how the music merges with the words. (i.e. how the text is set to the music)
214. I routinely sing through my entire program (i.e. recital/audition or competition repertoire).
215. I plan for "memorization time", when I can focus with intent on memorizing information without being under pressure.
216. I use devices to help me memorize my text/music (e.g. mnemonics – any learning technique that aids information retention or retrieval).
217. I divide the material that I need to memorize into manageable chunks/pieces.
218. I practice in short blocks of time (i.e. short sessions), but done frequently.
219. I rehearse the "meaning" of the information (i.e. with purpose and intent, not aimless reading/singing).
220. I read/sing my piece of music just before going to sleep.
221. I practice in "performance mode" for a specific number of days/weeks, before I feel comfortable and ready to perform.
222. I practice performing my repertoire in front of my teacher, or for a small group of people whose feedback I trust.
223. I experiment and come up with different solutions and approaches to improve my vocal technique.
224. I practice/rehearse in the clothing and shoes I plan to perform in.

Lesson/Coaching

- 225. I plan ahead, and bring specific pieces of music that I'd like to work on in my lesson/coaching.
- 226. I set realistic goals for myself in my lesson (e.g. have this specific aria/ song memorized).
- 227. I record my lesson/coaching in order to listen back to the comments made by my mentor.
- 228. I record my lesson/coaching in order to listen back to the quality of my voice
- 229. I record my lesson/coaching in order to listen back to the instrumental accompaniment.
- 230. I keep a lesson log, and take detailed notes about what I worked on with my mentor.
- 231. I work with my mentor to come up with solutions on how to practice.

Rehearsal

- 232. I write down music rehearsal notes in my score.
- 233. I write down staging/blocking notes in my score.
- 234. I write down thoughts about singing and rehearsal in a journal.
- 235. During rehearsal breaks, I physically review the staging/blocking (i.e. physically go through the motions of the staging).
- 236. I review written notes from the previous rehearsal before the next rehearsal.
- 237. I review written notes during breaks in rehearsal.
- 238. I make audio recordings of my rehearsals.
- 239. I listen back to rehearsal recordings during rehearsal breaks.
- 240. I listen back to rehearsal recordings outside of rehearsal, during my own practice time.
- 241. I check in with my colleagues and review staging and musical sections with them during rehearsal breaks.

Audition/Competition

- 242. I choose my repertoire much in advance of my audition/competition.
- 243. I construct a detailed plan to help guide me through the time period leading up to my audition/competition.
- 244. I study the audition/competition criteria and rules.
- 245. I prepare a checklist of tasks to help me remember things and stay focused on the day of the audition/competition.
- 246. While waiting for my audition time, I listen to a recording of myself singing my repertoire.
- 247. I review the text of my song/aria, speaking it out loud, but quietly.
- 248. I focus on singing "one piece at a time."
- 249. I focus on my strengths in the piece that I'm currently singing.

Performance

- 250. I set personal goals for myself in each performance (e.g. don't push my voice in that finale act).

Post-performance

- 251. After a performance/audition I reflect on my singing as objectively as I can.
- 252. After a performance/audition I self-reflect and write my thoughts down in a journal/notebook.
- 253. I objectively discuss and evaluate my performance with my voice teacher and/or coach.
- 254. I plan what to do next with my singing (e.g. preparing the next role, developing strategies and solutions to improve a specific technique, etc.).
- 255. I plan for breaks – time away from practice/performance and anything to do with singing.
- 256. Right after a show, I immediately evaluate what was successful, and what wasn't as successful in my performance.

Recording Session (official recording session, not a practice session/rehearsal)

- 257. I give myself a set number of trials to record a piece of music, and then go with my best recording.

Deliberate Practice Strategies – “Mental Practice/Imagery”

General (applicable to multiple situations)

- 258. I replace/reword negative thoughts about my singing into positive ones.
- 259. I use mental imagery to calm any anxiety or stress I may have before I sing (e.g. babbling brooks, warm sun on my face, etc.).
- 260. I use mental imagery to ease myself into meditation and focus.
- 261. I use a “mantra” – a word that I quietly repeat to myself (either mentally or verbally) to ease myself into meditation and focus.

Practice Studio/Rehearsal

- 262. I mentally rehearse my repertoire – hearing the music in my mind while looking at the score.
- 263. Once I'm familiar with the music, I mentally rehearse my repertoire – hearing the music in my mind without looking at the score.
- 264. Just before I sing through a song/aria, I take the time to rehearse the music in my mind (e.g. visualizing the text, the melodic phrases, the accompaniment, etc.).
- 265. I imagine how technical vocal manoeuvres feel.
- 266. I imagine that I'm performing in front of an audience.
- 267. I imagine watching myself perform, from the audience's perspective.
- 268. I mentally practice my music at the speed I will perform it.
- 269. I slow down my mental practice of the music to learn a new vocal skill.
- 270. I slow down my mental practice of the music to correct a bad vocal habit.
- 271. I write down/record the imagery I use, so that I can evaluate the results.

272. I mentally rehearse a challenging/problematic vocal skill in my head.
273. I mentally visualize myself performing well.
274. I plan specific mental images that match with realistic singing goals (e.g. Plan images that allow you to accomplish realistic breaths. Don't hyperventilate.).
275. I imagine possible distractions, and practice refocusing my attention.
276. When I'm feeling under the weather, I rely on mental practice to help keep me musically prepared, and to save my voice from fatigue.
277. I mentally review physical staging/blocking.
278. During breaks in rehearsal, I mentally review my musical/vocal parts (i.e. hearing the accompaniment and my voice in my mind).
279. I mentally review the text of my song/aria.
280. I guide my voice with a clear understanding of the text of my song/aria, and through efficient diction.
281. I visualize the actual text of my music, and allow it to guide my voice.
282. I mentally picture "one phrase at a time."
283. I mentally picture "one word at a time."

Lesson/Coaching

284. I imagine I'm performing in front of an audience during my lesson, not just my mentor.
285. I listen to my mentor's advice and feedback about my vocal production, and I adjust my mental imagery and approach according to his/her suggestions.

Audition/Competition/Performance

286. I use specific imagery to help me meditate and calm down while waiting for my audition/performance.
287. I imagine myself performing in a show for a much bigger audience, not just the audition panel.
288. While waiting backstage, I mentally go through my performance (e.g. feel/hear my voice perform, go through the song/aria text, etc.).
289. During intermission, I establish the mental mind-set of "starting again" – prepping for a new performance, in order to stay energized and present.
290. I use my senses – imagining sight, smell, sound, touch, taste and kinaesthetic sense (sense of body), to help me get into character.
291. I think of a specific thing (e.g. an image, a word, a sensation, a technical concept, etc.), that keeps me in the present and energizes my voice.

Post - performance

292. After a performance, I can visualize a clearer mental picture of myself performing on stage.
293. I feel a stronger connection with and response from my body, when I'm mentally reviewing a piece of music that I've just recently performed (i.e. a stronger mind-body connection).

Recording Session (official recording session, not a practice session/rehearsal)

- 294. I mentally review my aria/song before I attempt a trial at recording my singing.
- 295. I imagine I'm performing live on stage, to help energize my voice.
- 296. I replace any negative or distracting thoughts with the specific imagery that I've practice and prepared.
- 297. During an official recording session I imagine I'm performing live on stage, to help energize my voice.
- 298. During an official recording session I replace any negative or distracting thoughts with the specific mental imagery that I've practice and prepared.