MODULE 5 (BMPF7074D)

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Qigong in Voice Pedagogy: A Rapid Scoping Review of Its Potential Effects on Respiratory Coordination, Postural Stability, and Music Performance Anxiety

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Component One - Project Portfolio

Introduction:

As a singing instructor working at a performing arts academy and private studio, I teach students of various ages, with a focus on adolescents and young adults. Performance arts students especially often experience stress and anxiety during both class learning and stage performances (De Sousa, 2011). They frequently worry about not meeting expectations and feel anxious during the learning process. Studying voice can be complex and non-linear, demanding different types of coordination that sometimes cause cognitive overload (Studer et al., 2011). Incorporating imagery and non-tactile cues from Qigong instruction to achieve a more balanced and stable posture could help reduce cognitive load, making it easier and more enjoyable to learn to sing. Additionally, the meditative breathing in Qigong helps students achieve a calm, centred state (Tsai, 2025).

During my own voice lessons, I invited the students to adopt the grounded stance (Zhan Zhuang). I coordinated breathing in Qigong practice to help them achieve a more stable, balanced posture, reduce their anxiety, and become more willing to undertake difficult vocal tasks. These observations make me realise that perhaps more can be done than relying solely on technical descriptions of breath, alignment, and support in traditional Western voice pedagogy. Since MPA is a prevalent issue particularly in singers (Zhukov, Powers and Marko, 2026; Studer et al., 2011), a more embodied and holistic approach might help calm and organise the students' systems before they sing.

This raises both practical and developmental questions: why do Zhan Zhuang and related Qigong work so effectively at these moments, and how can such practices be integrated responsibly and systematically into voice teaching? At a professional level, it is essential to understand the mechanisms underlying the positive effects students experience from incorporating Qigong exercises. Personally, I practised BaDuanJin Qigong and Zhan Zhuang, and I would like to deepen my understanding of Qigong beyond casual practice and intuitive use in class, so that my teaching approach is grounded in research rather than my informal observations.

Planned Programme of Study:

Voice and singing teachers nowadays are increasingly recognising the importance of the interplay between the body, mind, and breath in singing. Techniques such as the Alexander Technique, Feldenkrais, and Body Mapping are now commonly utilised in studios, as they assist singers in kinesthetic awareness, posture, and breath management (Gassull et al.,

2024). Traditional Chinese Medicine offers its own movement-and-breath systems, and Qigong in particular has drawn interest for its effects on breathing, stress levels, and overall well-being. One of the many forms of Qigong, Liuzijue Qigong (LQG), often called the “Six Healing Sounds”, has been studied in people with vocal-fold paralysis, showing measurable improvements in voice quality and reduced self-reported handicap (Tang et al., 2017; Tang et al., 2019). Other studies with Qigong-based practice have reduced performance anxiety among young musicians by calming the nervous system (De Sousa et al., 2012; Matos et al., 2015). Despite the above potential, these concepts have not been thoroughly explored in mainstream voice pedagogy (Tsai, 2025).

Aims of this study:

- To map and synthesise the literature explaining how and why Qigong may be integrated into singing lessons.
- Identify pedagogically relevant practices that may support the teacher’s professional development in Qigong-informed instruction.

Objectives of this study:

- Identify peer-reviewed articles and selected grey literature, such as YouTube videos, on Qigong, singing, breath support, posture, and anxiety.
- Examine the possible mechanisms linking Qigong practice with improved vocal stability, breath coordination, and reduced anxiety.
- Identify which Qigong forms, principles, or instructional features appear most transferable to singing teaching.
- Evaluate the strengths, gaps, and limitations of the available literature to guide future practitioner learning and potential subsequent research.

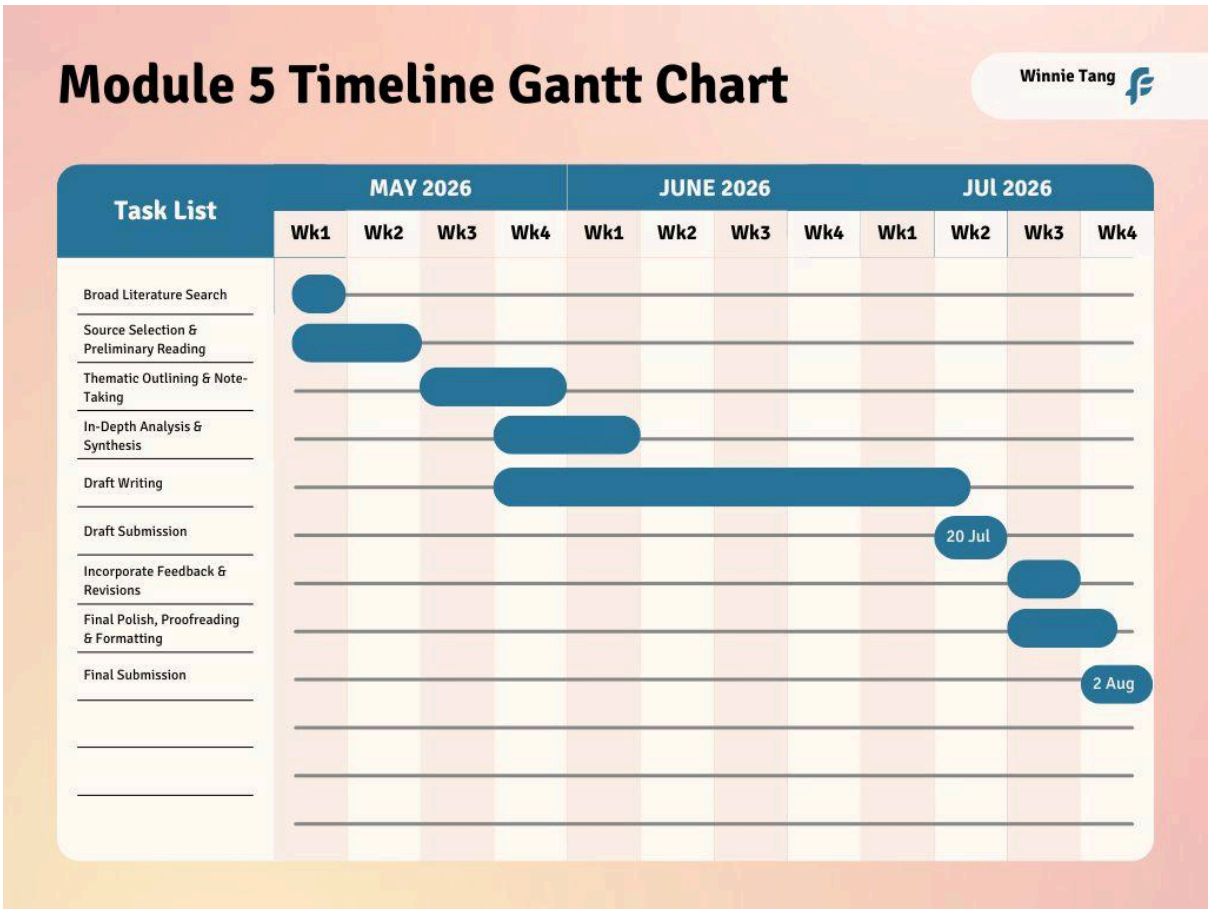
Expected learning outcomes:

By the end of this study, I aim to gain a fundamental understanding of Qigong and its various forms. I would like to identify the components of Qigong that are beneficial and relevant to voice pedagogy. Additionally, I seek to learn how to apply these techniques effectively to help my students engage in practices that resonate with their cultural backgrounds. Furthermore, I would like to identify areas in Qigong and singing where further study might be warranted to better equip singing/voice teachers for a more holistic approach in their teaching.

Activities undertaken will include:

Defining the review question. Conducting database searches and screening literature against inclusion and exclusion criteria. Organising data with Zotero. Then group findings into themes such as respiratory support, phonatory aerodynamics, posture/balance, and anxiety/stress. In addition to peer-reviewed research, the study includes selected grey literature, such as doctoral work or YouTube videos, when it adds conceptual or contextual value.

Gantt chart for timeline:



Methodology:

The methodology selected for this project is a rapid scoping literature review. Compared to a narrative review, which I adopted in my last module and which offered more freedom and flexibility (Sukhera, 2022), a rapid scoping review loosely follows the PRISMA-ScR guideline, which is adapted from the PRISMA used in systematic reviews (Arksey and O'Malley, 2005).

Scoping reviews are an option for studies with broad concepts, varied methodologies, and incomplete evidence (Arksey and O'Malley, 2005). Whereas a systematic review follows a strict protocol and is exhaustive in coverage to ensure the lowest risk of bias and higher reliability (Arksey and O'Malley, 2005). Both systematic reviews and scoping reviews are not feasible given the time constraints of this module. A systematic review is also impractical in this situation because the current topic covers a wide range of practices, including Qigong, breathing, posture, anxiety management, embodiment, and voice pedagogy, as I am only beginning to dive into this underexplored area of study (Sukhera, 2022). A rapid scoping review is more suitable in this case because the study explores an emerging interdisciplinary field rather than answering a narrowly defined question (Mays et al., 2001, cited in Arksey and O'Malley, 2005). Despite the flexibility and convenience of narrative and rapid scoping reviews, they also have a higher risk of bias and lower credibility (Arksey and O'Malley, 2005; Baethge et al., 2019; Sukhera, 2022). I intend to ameliorate these drawbacks by maintaining transparency and reflexivity throughout the process (Sukhera, 2022). This review adopts a critical realist stance because critical realism assumes that observable events (e.g. reduced performance anxiety and improved body/vocal stability) are generated by underlying mechanisms that are not directly observable (e.g. meditative breathing, zhan zhuang stance, and healing sounds in Qigong) (Okoli, 2015). And a critical realist perspective supports the inclusion of diverse study types across disciplines (Lawani, 2020).

As a voice teacher and casual Qigong practitioner, I am an insider researcher because of my extensive experience in voice teaching and my cultural background as a native Chinese person from the region where Qigong and Traditional Chinese Medicine (TCM) originate (Mayan, 2023). Since I have witnessed positive effects of Qigong during my lessons, I am biased toward its effectiveness in singing lessons. On top of that, I am a Qigong practitioner myself. Therefore, the stance of this review is neutral with a lean towards supporting the integration of Qigong into vocal instruction (epousal). This review seeks to identify literature on Qigong and singing, as well as related work, to examine what they collectively suggest about the pedagogical integration of Qigong into singing lessons. As a rapid scoping review, the five stages of the PRISMA extension for scoping review will be followed:

Stage 1: Identify the research question
Stage 2: Identify relevant studies
Stage 3: Study selection
Stage 4: Charting data
Stage 5: Collating, summarising and reporting the results

Since peer-reviewed literature on Qigong and singing/voice is limited, literature from medical and health fields is also drawn on, along with selected grey literature such as YouTube videos and doctoral theses. Grey literature is included because the topic of Qigong and singing is still emerging and lacks scholarly literature, while videos of qualified Qigong practitioners can provide accurate visual demonstrations. Doctoral theses contain rigorous and detailed studies, even though they have not yet been published.

Search engines and keywords:

Inclusion criteria:

- Peer-reviewed articles published in English.
- Relevant to Qigong and singing, Qigong and voice therapy or training, and Qigong and anxiety.
- Grey literature such as doctoral theses and online videos relevant to the topic.
- Articles published from 2000 onwards, except for seminal materials.

Exclusion criteria:

- Articles not relevant to either Qigong, singing, or Voice.
- Articles only related to Qigong but not voice, singing, balance, and anxiety
- Articles published before 2000, unless foundational to the topic.

The literature is screened by title and abstract for relevance, then collected, stored, and categorised in Zotero for full-text review (Randolph, 2009). Relevant articles are moved to the collection named Module 5 for full-text review and annotations. A spreadsheet and a folder on the computer are created to keep track of and copies of articles collected (Randolph, 2009). Upon preliminary screening, core articles are identified (Boell & Cecez-Kecmanovic, 2010).

Data extraction and evaluation:

Upon preliminary screening, core articles are identified (Boell & Cecez-Kecmanovic, 2010). Further search by footnote chasing (Bates, 1989) is used to look for more relevant articles. Notes are taken in Zotero and Google Docs for thematic analysis (Randoiph, 2009). Data are analysed inductively by theme (Braun and Clarke, 2006); three major themes emerged: respiratory support/aerodynamics, anxiety/stress, and posture/balance.

Component Two - Project Report: Review

Introduction:

Over the past few decades, the effects of various kinds of body-mind methods, such as Tai Chi, also considered a form of Qigong, despite its different origins (Rodrigues et al., 2022), the Alexander Technique, Body Mapping, Feldenkrais, Yoga, and Pilates, on singers have been explored (Gassull et al., 2024). “These studies have reported positive effects on resonance (Jones 1972), and the development of singing technique including articulation, broadening the register, vibrato, tone quality and tuning (Buchanan 2011; Buchanan and Hays 2014; Collyer 2018; Norberg 2010; Paparo 2016, 2022), performance and communication (Norberg 2010), musical expression (Buchanan 2011; Buchanan and Hays 2014), breathing and support (Buchanan 2011; Buchanan and Hays 2014; Collyer 2018; Mezzedimi et al. 2019; Norberg 2010; Paparo 2016, 2022), performance anxiety (Norberg 2010), self-confidence, and empowerment (Buchanan 2011; Buchanan and Hays 2014; Collyer 2018)” (Gassull et al., 2024, p. 322).

Qigong has been regarded as one of the most popular strategies for health preservation and disease prevention, focusing on energy work and movement (Bai, 2015, cited in Carcelén-Fraile et al., 2021). It is one of the four pillars of TCM that aims to improve physical, mental, emotional, and respiratory well-being (Chang et al., 2019). Although many studies have been conducted on Qigong related to anxiety and other health issues over the past twenty years, only in recent years have studies focused on Qigong and singing emerged (Tsai, 2025). Thus, it sparks my interest to examine the relationship between Qigong and singing and how it might be applicable in voice pedagogy.

What is Qigong:

Qigong is a Chinese traditional mind-body discipline that combines the essence of martial arts, Taoism, and Traditional Chinese Medicine (TCM) (Li, 2003; Guo et al., 2018; Gong et al., 2024). “Qi” and “Gong” in Chinese literally mean “breath/air” and “discipline/exercise,” respectively (Guo et al., 2018). Qigong employs physical movement and meditation to integrate body, mind and spirit (Guo et al., 2018; Gong et al., 2024). The discipline involves executing slow, controlled, gentle, and occasionally intricate movements at moderate aerobic intensity that require and induce mental awareness of a perceived sensation, often referred to as the flow of qi in TCM (Greten, 2007, as cited by Duarte et al., 2020; Van Dam, 2020). Collectively, these movements foster relaxation, coordination, balance, strength, flexibility and overall well-being (Van Dam, 2020).

According to current understanding of TCM, TCM diagnosis can be considered a traditional paradigm of “vegetative system biology” that aims to provide structured therapeutic interventions (Sertel et al., 2010; Matos et al., 2015). "Vegetative" refers to the autonomic nervous system, which governs involuntary body activities such as heart rate, blood pressure, and microcirculation. (Matos et al., 2015). “Within this concept, Qigong is understood as a traditional vegetative biofeedback therapy consisting of concentrative motion and postures combined with breathing exercises” (Matos et al., 2015, p.1). TCM theorised that discomfort, pain and illness arise from blocked or stagnant energy (qi) flow within the body's meridian channels. According to this theory, unobstructed and balanced energy (qi) flow enables health maintenance, improvement and disease prevention (Chen and Yeung, 2002), as the mind guides the qi, and qi guides the xue (blood). The Heidelberg model of TCM regards “qi” as vegetative functional capacity and can be compared to the effects of “xue” (blood) with microcirculation; it can be understood that imagination and awareness can activate vegetative capacities that modulate microcirculation, as evidenced by changes in skin temperature and related biophysical parameters (Matos et al., 2015). The activation of "qi" occurs through controlled breathing and a distinct mental state of heightened awareness, which enhances overall vegetative regulation and homeostasis (Matos et al., 2015).

Given its accessibility and ease of learning, Qigong has gained widespread popularity among older adults in Chinese communities. The practice suits individuals of any age or physical condition. It requires no specialised equipment and can be performed autonomously anywhere (Guo et al., 2018; Carcelén-Fraile et al., 2021). Qigong is also a widely practised approach for health preservation and disease prevention (Carcelén-Fraile et al., 2021). It is known to improve the quality of life for patients with conditions ranging from cancer (Sertel et al., 2010) to knee arthritis (Hou et al., 2015; Lee et al., 2009). Qigong has been gaining popularity globally (Duarte et al., 2020; Van Dam, 2020). It has also been recognised by official health systems in some European countries as a preventive health measure (Matos et al., 2015; Duarte et al., 2020). Regardless of its popularity, scientific evidence for Qigong-related effects was scarce in the past due to the difficulty of objectifying results, the lack of uniformity in Qigong methods, and insufficient controls and blinding (De Sousa, 2011). However, over the past twenty years, numerous studies on Qigong have emerged, primarily focusing on health; but only a few address singing (Tsai, 2025).

Throughout the history of Qigong, various schools, styles, and forms have developed (Van Dam, 2020): these include Liuzijue (Six Syllable Formula), Baduanjin (Eight Pieces of

Brocade), Tai Chi Qigong, Wuqinxi Qigong (Guo et al., 2018), and White Ball Qigong (Matos et al., 2015), which will be looked at in this review.

Liuzijue Qigong (LQG)

“Liuzijue Qigong is based on TCM of Yin and Yang, the 5 phases, the unity of man and nature, and engendering and restraining. This correlates the sequence of the 4 seasons with the attributes of the 5 viscera (liver, heart, spleen, lung, and kidney). It uses the shape of the mouth in the pronunciation of the 5 musical tones (Jiao, Zhi, Gong, Shang, and Yu) to correlate with the movements of the breath” (Jiang and Zou, 2013; Liu and Zhang, 2016, cited in Guo et al., 2018, p. 7). The Liuzijue (LQG) refers to six healing sounds corresponding to the five viscera and an additional regulatory function; the practice is intended to regulate organ function, mood, and internal Qi flow (Guo et al., 2018). In 2010, the Chinese General Administration of Sport officially standardised the six monosyllables of LQG to xu, he, hu, si, and chui (Guo et al., 2018; Gong et al., 2024). These syllables are produced with diaphragmatic breathing and pursed lips that pair with body movements (Guo et al., 2018; Gong et al., 2024). The consonant-vowel combinations of the six syllables produce sounds that are both acoustically and articulatorily comparable to those found in semi-occluded vocal-tract exercises (SOVTEs) as well as to the easy onset associated with yawn-sigh techniques used in speech therapy (Gong et al., 2024).

LQG is regarded as one of the most practised forms of Qigong for COPD rehabilitation (Guo et al., 2018), and the China Qigong Management Centre also recognises it as part of their New Health Exercise Series (Xiao and Zhuang, 2015). Numerous clinical trials have been conducted on LQG, particularly in chronic obstructive pulmonary disease, with multiple randomised trials now examining its effects on lung function, exercise capacity, and quality of life (Guo et al., 2018).

LQG demonstration: https://www.youtube.com/watch?v=x00mBL5OL4A (Chinese Health Qigong Association, 2022).

Baduanjin Qigong (BDJ)

BDJ (meaning the eight pieces of brocade) consists of eight movements/postures with intensity from mild to moderate effort. These movements and postures require body symmetry/balance, as well as slow, coordinated breathing patterns that bring about a meditative state of mind while enhancing practitioners' coordination and balance (Zhang et al., 2022).

> The main portion consisted of 8 Baduanjin Qigong postures known as “the eight pieces of brocade”: (1) “Shuang Shou Tuo Tian Li San Jiao” (holding the sky), (2) “Zuo You Kai Gong Si She Diao” (make a bow on both sides like shooting an eagle), (3) “Tiao Li Pi Wei Xu Dan Ju” (separate heaven and earth), (4) “Wu Lao Qi Shang Wang Hou Qiao” (look back), (5) “Yao Tou Bai Wei Qu Xin Huo” (move the head and shake the tail), (6) “Liang Shou Pan Zu Gu Shen Yao” (touch the feet with both hands), (7) “Cuan Quan Nu Mu Zeng Qi Li” (clenching fists with angry eyes), (8) “Bei Hou Qi Dian Bai Bing Xiao” (raising and lowering the heels) (Carcelén-Fraile et al., 2021).

BDJ is a very popular mind-body health practice among older populations in China due to its minimal physical and cognitive demands(Zhang et al., 2022). Studies have shown that BDJ improves cognitive and physical function in older adults regardless of pre-existing cognitive conditions (Wang et al., 2021), relieves debilitation caused by cancer in cancer patients (Kuo et al., 2021), and provides pain relief for older adults with chronic lower back pain (Yang et al., 2021).

BDJ demonstration:

https://www.youtube.com/watch?v=IKM3h92Y5f (San San Tai Chi, 2026).

White Ball Qigong (WBQ)

WBQ is a form of Qigong formulated and systematised under the Heidelberg model of TCM (Greten, 2013a,b, 2014; Greten, 2013b, cited in Duarte et al., 2020)and has been employed by multiple studies as the standard intervention (Branda~o, 2012; Fernandes, 2011; Ferreira, 2015; Lopes, 2015; Oliveira, 2014; Pereira, 2015; Ponte, 2015; Saganha et al., 2012; Seabra, 2014; Seiça, 2013; L. Sousa, 2012, cited in Duarte et al., 2020). WBQ involved a nondynamic standing posture similar to the Wu Chi posture in the Zhan Zhuang (standing meditation) system, minimising the effects of physical movement. In the exercise, imagining holding the ball in front of the abdomen (Dantian) is used to induce a sensation traditionally referred to as ‘qi’ (Duarte et al., 2020). WBQ is a simple, short-duration Qigong exercise that is easy to learn and requires little space, with positive effects on anxiety and stress management (Matos et al., 2015; Duarte et al., 2020).

WBQ demonstration:

https://www.youtube.com/watch?v=vLoZytOkuVQ&t=11s (Qigong For Vitality, 2017).

Respiratory Support and Phonatory Aerodynamics:

According to Watson (2014) in The Oxford Handbook of Singing, balanced inspiration and expiration are essential for proper breathing. Inspiration relies on the diaphragm and external intercostal muscles. For optimal breath control, the diaphragm, intercostal muscles, pelvic floor muscles, and abdominals need to be flexible enough to work together in coordination (Gassull et al., 2024). A number of systematic reviews and meta-analyses of randomised controlled trials have examined various forms of Qigong, including Tai Chi, BDJ, and LQG, and suggested these practices show positive effects on respiratory and skeletal muscle function, improved psychological well-being, and better quality of life in patients (Zou et al., 2017; Guo et al., 2018; Larkey et al., 2018; Guo et al., 2024).

Besides respiratory support, phonatory aerodynamics is also an essential component in healthy and efficient phonation. “Singing requires exquisite control and coordination between the respiratory and phonatory systems to accurately and efficiently control glottal airflow. Any underlying problem in pulmonary support or imbalance in glottal airflow may adversely affect a singer's ability to maintain proper phonatory control and sound quality” (Lundy et al., 2000, p. 178). Semi-occluded vocal tract exercises (SOVTEs) could be a helpful tool for singers to improve vocal health and phonation efficiency (Holm, 2025; Titze, 2018; Titze & Verdolini Abbott, 2012). Titze (2018) suggested that a semi-occluded vocal tract creates a back air pressure above the glottis (supraglottal pressure), which spreads the upper edges of the vocal folds apart, creating more parallel medial surfaces between the folds. These parallel medial surfaces encourage a stable intraglottal pressure, which reduces collision forces during phonation due to smaller vibrational amplitude. This light contact between the true vocal folds decreases the phonation threshold pressure (PTP), making phonation easier and more efficient. Acoustically, SOVT can lower the first formant (F1) down to around 200Hz with its elongated vocal tract. Such lowered F1 helps stabilise vocal registers and further reduce PTP due to its inertive vocal tract configuration (Titze, 2018).

LQG is a common supplemental treatment for specific voice disorders in China (Guo et al., 2024). Unlike other forms of Qigong, LQG involves producing specific sounds during practice. These sounds are produced by pursed lips, while focusing on the vowels of the six Chinese characters used in LQG, which can be compared to the SOVTEs used in conventional voice therapy (Guo et al., 2024). Particularly with “xu, sɪ, chuɪ, xɪ, begin with /ɕ/, /s/, or /tʂ‘/, in which the tongue tip is elevated to the alveolar ridge or the hard palate forming the narrow vocal tract” (Guo et al., 2024, p. 1). In addition, the formation of split syllables can be comparable to conventional voice therapy (Guo et al., 2024). For example, the words "he" and "hu," which begin with the [x] sound, are produced in a very relaxed manner, similar to

confidential flow therapy (Verdolini-Marston et al., 1995), thereby helping relax the vocal mechanism during phonation. When combined with the proper body posture in LQG, these techniques can effectively regulate respiratory and phonation functions (Guo et al., 2024).

Gong et al. (2024) investigated how LQG affects the aerodynamics of phonation in healthy individuals. 30 healthy volunteers (all non-smokers, nonhabitual drinkers, without voice or respiratory disease) were recruited from medical or normal universities (10 males and 20 females with a mean age of 23.97). The subjects were given strict protocols to avoid reflux and dehydration. Female participants were given strict testing guidelines to avoid hormonal influence. Subjects were divided into two groups to conduct phonation tasks under two conditions: normal sitting and LQG posture (slight squat with bent knees).

Each subject was trained for about 5 minutes in the posture; tasks were randomised, and paired-sample t-tests were used to compare the means of the parameters between the sitting and LQG postures. The researchers measured and analysed the expiratory volume (FVC), subglottic pressure at comfortable phonation (SGP), glottal resistance (GR), glottal efficiency (GE), contact quotient (CQ), mean airflow (MF), fundamental frequency (F0), sound pressure level (SPL), PTP, and maximum phonation time (MPT) of the subjects. Across all 30 subjects, LQG posture significantly increased FVC, SGP, F0, and PTP compared with sitting ($P < 0.05$), while CQ, MF, SPL, GR, GE, and MPT did not differ significantly.

The increase in FVC with the LQG posture may be attributed to its encouragement of abdominal muscle tightening and core stabilisation. This effect is similar to the deep muscle training exercise program used in the research by Szczygiel et al. (2018). Their study demonstrated that deep muscle training can significantly improve the body's sagittal posture, enhance torso postural control, and thus increase breathing amplitude (Szczygiel et al., 2018). Also, the subjects may have acclimated to the breathing pattern of LQG, thereby inhaling more and exhaling less of their vital capacities, thereby increasing the amount of airflow available for phonation (Gong et al., 2024). According to Gong et al. (2024), greater breath support, driven by abdominal breathing, is needed to improve phonation.

In men, LQG significantly increased FVC and PTP, with only a slight increase in MPT. In women, PTP increased significantly, but changes in FVC and MPT were not significant. Guo et al. (2024) suggested that the results might be due to the male participant performing the LQG posture more effectively and that the female participant may have weaker abdominal

breathing. Guo et al. (2024) believe that with more practice of the posture, longer MPT could be achieved without an increase in PTP.

The increase in SGP and F0 with a consistent MF at a comfortable phonation level suggests that the intrinsic laryngeal muscles are more active in the LQG posture. This results in better medial glottal compression. Szczygiel et al. (2018) and Ramig & Dromey (1996) demonstrated that increased SGP and decreased MF are direct results of enhanced glottal closure. Additionally, higher FVC and GR increase SGP and F0. Improved glottal closure reduces breath escape and overuse (Guo et al., 2024). Guo et al. (2024) hypothesised that the LQG posture elicits the vocal and respiratory muscles to support the airstream for phonation better and coordinates glottal airflow with laryngeal muscular effort to improve its use. They also hypothesised that long-term LQG training can enhance lung capacity for phonation and strengthen the muscles used in phonation (Guo et al., 2024). Guo et al. (2024) also proposed that LQG has potential as a voice therapy method for glottal closure insufficiency (GCI) (e.g., vocal fold paralysis, hypofunctional dysphonia, presbyphonia) by improving glottal resistance and efficiency and possibly reducing collision stress on the vocal folds.

Given the above evidence, it can be argued that LQG offers a body-integrated approach which facilitates the development of respiratory support and phonatory efficiency, which can be applicable to singing and voice training. LQG can be incorporated in the voice studio as a form of SOVTEs that also enhance respiratory and bodily stability simultaneously. It can serve as both a warm-up and rehabilitative tool in the voice studio.

Balance and Stability:

To achieve effective singing and sustainable vocal performance requires coordinated bodily function and a thorough understanding of the body system (Moreno, 2026). “The quality of musical performance correlates directly with the quality of physical movement” (Moreno, 2026, p. 69). Unrestricted posture and breath management have always been deemed important in voice pedagogy (Tsai, 2025). Posture and mental attitude are not only the foundation of efficient breathing and healthy singing (Gassull et al., 2024). They are also the most important features of Qigong, along with breath regulation, specific movements of the limbs, and self-massage (López-Arza et al., 2013). However, there is not one ideal posture for singing, but a non-static balance of the body’s scaffolding: head, shoulder girdle, pelvis, and feet (Cardoso, Lumini-Oliveira and Meneses, 2019). The alignment of the pelvis affects the alignment of the vertebral column, affecting the regions closely related to harmonic

richness (Caçador and Paço 2018; Johnson and Skinner 2009; Luck and Toiviainen 2007; Staes et al. 2011, cited in Gassull et al., 2024). Together with the degree of tension in the iliopsoas muscle, it also affects the ease of diaphragm descent (Sajko and Stuber 2009). Qigong practices are considered to have substantial benefits in improving balance and coordination, enhancing stamina, and relaxation of the fascia (Cohen, 1997, cited in Tsai, 2025).

According to a mixed-method study by Tsai (2025) on singers, participants reported improvements in stability, balance, and expressiveness in their singing after BDJ intervention. The study was conducted with 15 university classical singing students. Participants were to perform the same song in front of an audience twice, one week apart. A single 16-minute BDJ routine was performed between the two performances. Participants were given a Performance Anxiety Questionnaire (PAQ), OMNI-Vocal Effort Scale (OMNI-VES), and Evaluation of the Ability to Sing Easily (EASE) for assessment. A post-intervention interview was also given following the final performance. During the interviews, participants reported a shift in mental and physical state, as well as in their breathing patterns. All participants reported calmness and reduced anxiety with observable mitigation of symptoms such as shaking and rigidity after the BDJ intervention. One third reported noticeable postural shifts and increased kinesthetic awareness. Most reported some degree of bodily relaxation, ranging from the jaw, neck, and shoulders to the abdomen. 14 participants described different degrees of improvement in breathing patterns, claiming a shift from controlled and effortful to more intuitive and efficient. 7 participants observed a stronger sense of grounding after the BDJ practice. Results from the PAQ showed a significant decrease in MPA on 14 out of 20 items. However, there were no significant changes in self-perceived effort (OMNI-VES). Unfortunately, the EASE data could not be analysed due to an error in the administration.

In a survey study by Rodrigues et al. (2022) on perceived health benefits of Tai Chi and Qigong, balance and mood scored the highest with a mean of 4.66/5. Followed by general health, coordination, posture, leg strength, concentration/focus, breathing, relaxation, and tranquillity. Improved sleep, flexibility, self-control, and arm strength also reported positive ratings but slightly lower than the above. Participants are mainly from the United States and Europe, consisting of 216 males and 129 females with a mean age of 51 and an average of 14 years of experience in practising Tai Chi and/or Qigong. The online survey consists of 14 items using a 5-point Likert scale, and 1 representing “completely disagree” and 5 meaning “completely agree”. According to the results of this study, enhanced balance seems to be the most important perceived health benefit. Klein, Baumgarden, and Schneider (2019)

supported this in their systematic review, stating that Tai Chi and Qigong can be an effective intervention for balance training and fall prevention, comparable to conventional interventions if not better. Other studies also confirmed that Tai Chi and Qigong have contributed significantly to the balance of those with Parkinson's disease, multiple sclerosis, and autism (Song et al., 2017; Burschka et al., 2014; Sarabzadeh, Azari and Helalizadeh, 2019, cited in Rodrigues et al., 2022). Improved coordination is also one of the main perceived benefits, along with posture. Posture can be static or dynamic; the term "posture" can be a complex subject since it involves multiple aspects such as strength, muscular resistance, balance, and flexibility. The authors argued that if Tai Chi and Qigong are practised therapeutically, they could improve coherent control of body motion and postural balance (Rodrigues et al., 2022).

Carcelén-Fraile et al. (2021) demonstrated the positive effects of BDJ on muscle strength and static balance in postmenopausal women. The study recruited 117- 125 postmenopausal Spanish women with a mean age of 69.7. Women under hormonal replacement therapy and/or women with vestibular, severe systemic, neurodegenerative, or major vision problems were excluded. Participants were divided into two groups. The Qigong group practised BDJ twice weekly for 12 weeks under supervision, while the control group only received general physical activity recommendations without supervision. After 12 weeks, the Qigong group reported significantly higher handgrip strength, measured with a hand-held analog dynamometer, compared to their own baseline and the control group. In terms of postural stability, a stabilometric platform and corresponding software were used for measurements. Results showed that the centre of pressure (CoP) mean velocity, sway area, and both mediolateral and anteroposterior oscillations were improved in the Qigong group, more pronounced with eyes open than with eyes closed. Whereas there was no improvement in the control group regardless of eye conditions. This indicates significantly improved static postural control and muscle strength after Qigong intervention.

A pilot randomised controlled trial by López-Arza et al. (2013) examined the effect of Qigong on stability and balance in healthy young women. The results were based on 27 healthy participants, all female medical students aged 18-25 without previous Tai Chi or Qigong experience. The Qigong group practised the "20 figures for health and long life" for one hour twice weekly for four weeks while the control group abstained from intervention. The "20 figures for health and long life" is a 20-movement Qigong routine. It combines traditional Chinese therapeutic exercise and Qigong, such as Wuqinxi, Yijinjing, and BDJ. Data were obtained by performing a unipedal stance test on a Wii Fit pressure platform. The Qigong group showed significant improvement in stability post-intervention ($P < 0.045$) and also

showed improved baseline from pre- to post-intervention, indicating overall progress in the development of stability. The control group remained relatively unchanged in their stability. However, the sample size of this study is small, and both studies above (Carcelén-Fraile et al. 2021; López-Arza et al., 2013) are based only on female participants, although one is on older menopausal women and the other is on younger healthy females. This suggests that Qigong can be beneficial to core strength and stability regardless of age.

Various studies and systematic reviews have shown that Qigong can be beneficial for core strength and stability regardless of gender (Zou et al., 2017; Larkey et al., 2018; Yuen et al., 2021; Wang et al., 2022; Wang et al., 2026). However, they are mostly done on the elderly population or individuals with medical conditions, e.g., post-stroke and COPD. More Qigong-related studies on healthy individuals would shed light on studies in other areas, for example, singers, instrumentalists, actors, and athletes.

Anxiety Reduction:

"One of the prime benefits of Qigong seems to be stress reduction, and one of the main concepts of this practice is to use the mind to guide activation and deactivation patterns by imagination" (Matos et al., 2015, p. 2). Music performance anxiety (MPA) has been a persistent issue among musicians regardless of age, experience, and instruments played, especially among singers, since musicians of breath-oriented instruments are more susceptible to hyperventilation due to MPA (Zhukov, Powers and Marko, 2026). Studer et al. (2011) reported that singers and wind instrumentalists have a higher frequency of respiratory symptoms caused by MPA among other musicians, especially in females. Wells et al. (2012) suggested slow breathing is effective in mediating MPA in musicians who rely on breath-generated sound. According to Osborne & Kirsner's (2022) overview of MPA, cited in Zhukov, Powers and Marko (2026), deep breathing, yoga, and meditation have been recognised as effective relaxation techniques for reducing physical symptoms of MPA. Qi is activated by breath control and a specific state of mental awareness, together with concentrative postures or movements; Qigong can improve the overall state of homeostasis (Sancier and Holman, 2004, cited in Matos, 2015).

According to Wall (2005), De Sousa (2011), Duarte (2013), Duarte et al. (2020), and Gonçalves et al. (2023), Qigong can be effective in reducing emotional exhaustion and anxiety, as well as improving attention levels in middle and high school music students. Multiple studies have demonstrated the effectiveness of Qigong on anxiety reduction in the medical field (Wang et al., 2013); only limited studies are dedicated to musicians, let alone singers (Tsai, 2025). Amongst those studies on musicians, enhanced relaxation, body

awareness, better focus, and more efficient breathing were reported (Hofmeyr, 2005; Bond, 2023; Benson, 1998; Cao, 1989, cited in Tsai, 2025).

Tsai (2025), previously mentioned in the Balance and Stability section, utilised BDJ intervention in her study and demonstrated significant improvements in MPA among the singers studied. While the quantitative results indicated these improvements, there were no significant differences in vocal effort or perceived singing quality. However, during post-session interviews, the singers reported benefits such as enhanced breathing, greater relaxation, increased groundedness, improved awareness of technique, and a stronger stage presence.

De Sousa (2011) examined eight Portuguese children recruited from four different music academies (1 boy and 7 girls), aged 10-12 years old, and a control group of eight other children (2 boys and 6 girls) to assess the effects of Qigong on anxiety levels before flute audition performances by measuring their salivary cortisol levels, superficial muscle tension (trapezius muscle), heart rate, blood pressure, reaction time, and evaluating their psychological scores using EADS-C test. The Qigong group received WBQ training for 30 minutes twice weekly for over 7 weeks, while the control group received no intervention. The subjects' perceived anxiety level and blood pressure decreased in both groups, with a greater reduction in the Qigong group. The heart rate results show an opposite trend: a decrease in the Qigong group and an increase in the control group. Muscle tension escalated in both groups, slightly higher in the Qigong group and the time reaction was reduced in both groups, greater in the control group. Cortisol levels also declined in both groups, with a greater decrease in the Qigong group. As a result, De Sousa (2011) concludes that Qigong can reduce subjects' perceived anxiety, blood pressure, heart rate, and salivary cortisol levels. However, only the decrease in heart rate was significant. The results showed no improvement in muscle tension or reaction time (De Sousa, 2011). Nevertheless, "during the development of the study it was shown that thermography may be a useful tool for objectifying Qigong related effects" (De Sousa, 2011, p. 47). Thermographic data were collected by Luis Matos; the results suggested an increase in hand temperature after the Qigong intervention; however, they were not presented in this study (De Sousa, 2011).

Matos et al. (2015) recruited 6 females and 1 male 10–12-year-old Caucasian flute students from a local music academy with MPA. All were in good health and had no experience in Qigong. The subjects practised WBQ for 30 minutes daily and twice weekly under supervision for 7 weeks. In addition to obtaining heart rate measurements, Matos et al.

(2015) used infrared thermography, a method suggested by Qin et al. (1997, cited in Matos et al., 2015), to measure dynamic temperature fluctuations in the hands and arms during Qigong training. Data were obtained at baseline and after the Qigong intervention. During the control experiments, subjects practised only the WBQ posture without specific intention. Then, they practised the WBQ with a specific mental focus on holding the white ball between their hands to achieve a particular state of mental awareness. Infrared thermography showed significant increases in hand temperature ($P < 0.01$) during Qigong exercises compared with baseline in both assays. Activation times were under 2 minutes, and heating rates were higher after training. Heart rate also decreased throughout the program (from 102.9 to 92.0 bpm), suggesting reduced anxiety and greater relaxation. The heating rate of the hands correlated negatively with heart rate and positively with fingertip temperature, especially in the second assay. However, when comparing the first and second assays, there were no substantial statistical differences; this could indicate that the children are quickly gaining the ability to activate the vegetative response on demand through Qigong practice to alleviate anxiety-induced cold hands. Principal components analysis also indicated that children's vegetative responses became more homogeneous over time. "These effects were stable after weeks of training, allowing for playing the flute with warm fingers and reduction of the anxiety-induced elevation of the heart rate even without prior application of Qigong exercises" (Matos et al, 2015, p. 5), implying a possible conditioned, long-term vegetative remodelling (Matos et al., 2015).

De Sousa (2011) and Matos et al. (2015) demonstrated that Qigong, such as WBQ, can be viewed as a traditional form of vegetative biofeedback. These exercises help children learn to adjust their autonomic responses to stress, leading to lasting mind-body benefits. As a result, children experience warmer hands and a lower heart rate even when they are not actively engaged in the exercises. "In its traditional understanding, TCM holds that "qi," a functional power in the body, may be seen in functional physical signs" (Matos et al., 2015, p. 2). Infrared thermography as an objective measurement methodology translates TCM concepts of Qi and Xue into parameters such as peripheral microcirculation, alterations in acupoint electrical potential and resistance, and shifts in the surrounding biomagnetic field, which are essential to clinical studies of Qigong; it is a critical bridge between TCM, Qigong, and Western medicine (Matos et al., 2015).

Mitigation of MPA is especially important for singers because sound production would be interfered with or cease at the true vocal folds level when the primary function of the larynx (breathing and protection of the airway) overrides the secondary function (phonation and singing) by constricting the airway when the autonomic nervous system is triggered due to

danger, stress, or difficult vocal tasks (Helou et al., 2013). Other symptoms of MPA for singers include tremors, hyperventilation, memory lapses, and muscular tension, which can impair vocal stability, technical execution, and artistic expression (Tsai, 2025). Qigong can be an effective and essential tool for singers to reduce anxiety and enhance performance (Rodrigues et al., 2022; Tsai, 2025).

Conclusion:
Although studies on Qigong and singing are scarce, the potential benefits of applying Qigong in singing can be inferred from studies in other areas. Positive effects on respiratory support and the aerodynamics of phonation have been observed in studies with healthy individuals (Gong et al., 2024). It can be suggested that LQG can be adopted as a warm-up or rehabilitative tool for singers because of its similarities with SOVTEs commonly used by speech therapists and voice teachers. Carcelén-Fraile et al. 2021) and López-Arza et al. (2013) demonstrated that BDJ and BDJ-related Qigong can be effective in enhancing muscle strength, balance, and stability in women across ages. However, the population was limited to women. Systematic reviews have reported self-perceived improvements in stability, balance, and coordination in a more diverse population (Rodrigues et al., 2022). Studies on music students reported the effectiveness of Qigong in mitigating MPA through measurable physiological data (Tsai, 2025; De Sousa, 2011; Matos et al., 2015). This aligns with my observation in the voice studio, where the Zhan Zhuang stance was introduced; students showed immediate positive effects on coordination, breathing, and vocal stability.

As more voice teachers are turning to embodied approaches (Moreno, 2026), further Qigong-related studies would be valuable for the application of Qigong in voice training. Since most of the studies related to singers are pilot studies with relatively small sample sizes, larger sample sizes could ensure the rigour of future research. The long-term effects of Qigong practice on vocal techniques and MPA warrant further investigation. Nevertheless, current evidence suggests that Qigong can be a valuable complementary practice that addresses the interconnected physical, mental, and respiratory aspects of singing, consistent with contemporary understanding of embodied voice pedagogy.

Critical Reflection

Critical reflection is a reflexive practice that supports professional or academic development by enabling individuals to examine their experiences, actions, and expectations to gain insight into further learning and growth (Schön, 1983). There are many different kinds of

critical reflection formats available, for example, Kolb and Gibbs. Since I have personal experience using Gibbs' reflective cycle (1988) in the previous module, I will employ it again in this module. Gibbs' reflective cycle includes six parts: description, feelings, evaluation, analysis, conclusion, and action plan (Heoi-Seon, 2022). I would like to reflect on my experience with voice typing versus hand typing, the use of Grammarly, and my perceived difficulty in writing across the different modules, to help me analyse my learning process.

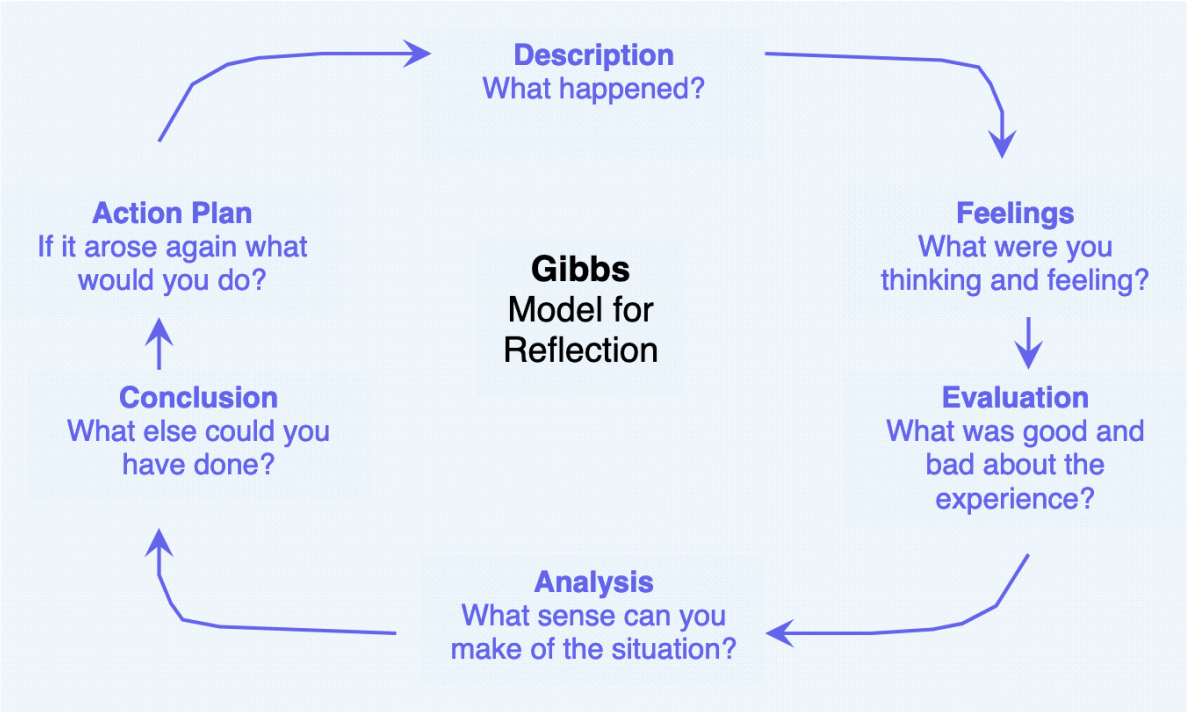


Figure: Gibbs' reflective cycle adapted from Finlay, 2008.

Description:

While writing module 5, I developed a hybrid approach to my assignment. In addition to hand-typing, I incorporated voice typing using the tools in Google Docs. This was because my hand-typing skills were subpar; retyping and correction became too frequent. For efficiency, I tried voice typing. However, I returned to hand-typing eventually because I felt it allowed me more time to process information. I also used Grammarly to correct my spelling and improve my texts. Grammarly has been widely used in higher education (Bailey et al., 2025). Regardless of its helpfulness, one disadvantage of Grammarly is that its corrections can sometimes be detected as AI-written. And ironically, some of my uncorrected writing has been flagged as AI-written by Grammarly's plagiarism check. Compared with the previous modules, I found the reading easier in Module 5. Logically, I would assume it would be less demanding to write this time. However, it turned out to be the opposite.

Feelings:

Initially, I thought voice typing might improve the efficiency of my writing. But as I continued, I felt that my brain was not keeping up with my voice. Hand typing seems to give me more time to organise my thoughts. The fact that my uncorrected text is flagged as AI-written frustrates and concerns me, as we need to pass a similarity check at the university. However, after discussing this with my module tutor, I felt more at ease about using Grammarly to improve my writing.

Reading in module 5 was a breeze and enjoyable because the materials were more familiar and easier to digest than the neuroscience articles in module 4, which literally burned my brain. Hence, I assumed my chain of thought would be smoother in module 5. However, as I started to write my review, I found that I was merely reporting what I read instead of weaving it together into a coherent plan. I got frustrated as I saw scattered information all over the assignment and did not know how to tie them together coherently. I feel like I have not done my best in putting this review together because of a lack of planning.

Evaluation:

Having experience with both hand and voice typing has helped me determine which method suits me best, which is valuable for future writing. Clarifying my concerns with my tutor gave me more confidence in using Grammarly, as it focuses on the quality of the writing rather than on the intricacy of the language. And some writing will be flagged as AI-written regardless. Module 5 taught me the importance of planning in advance when writing literature reviews. As my tutor said, the story is more important, and knowing what you would like to deliver dictates the review.

Analysis:

This preference for typing by hand over voice typing revealed that my brain is faster than my hands. Perhaps voice typing is better suited to replying to emails and messages that require less mental effort. A slower pace would be better for writing structured materials like literature reviews. Foley et al. (2020) found that the speed difference between hand and voice typing was negligible during composition, possibly due to the extra mental load. Even though my typos frustrate me, I am starting to rely on Grammarly to correct my spelling and grammar afterwards, rather than stopping to retype immediately, so it does not interrupt my

flow of thought. I think my anxiety about using Grammarly stems from uncertainty about what is considered acceptable when using AI-assisted writing tools. A clearer understanding of the protocol for ethical AI use would help ease this concern (Marín et al., 2025). Reflecting on my approach, I realise there was insufficient planning before this module. I was overly focused on the content rather than on the flow and the story of this review. In addition, the lack of planning led to wasted time spent reading and writing about irrelevant material.

Conclusion:

I think my worry about my typing speed stems from the fear that my hands might lag behind my thoughts, causing me to forget what I want to write before I can type it. Instead, I should have taken better notes while reading and writing to reduce the risk of forgetting information. I could have addressed my concerns about the ethical use of Grammarly earlier, rather than checking and rewriting unnecessarily. I could have been more decisive about my research question and discussed it thoroughly with my tutor sooner, so I would not have wasted time on irrelevant materials.

Action Plan:

For my next module, I will be more decisive about my research question to allow ample time for planning. More tutorial sessions should be scheduled during the planning stage of the assignment to avoid unnecessary distractions. I will confine myself to using only the improve function on Grammarly to avoid AI writing and not worry even if some of my own writing is flagged. I will devise a better note-taking system to facilitate retrieval of information, so that I do not have to worry about my typing speed.

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