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## **Finding focus : using external focus of attention for practicing and performing music**

Williams, S.G.

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**Author:** Williams, S.G.

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## 10

## **Disseminating and Applying Research on Musicians' Motor Learning to Musicians and their Teachers**

Researching the question of what to focus on during music practice and performance has led me on an interdisciplinary journey into fields where I am not an expert (movement sciences, music psychology and neuroscience). My aim was to be able to present the relevant theories, concepts and research findings well enough, and also clearly enough, for musicians and people who train musicians to understand. The designs I made to explore external focus are only examples of the infinite number of ways that external focus can be used, explored and researched in the field of music. There is a real need to develop holistic ways to train musicians by designing learning environments that encourage exploration and connectivity (neural, inter-personal and interdisciplinary). It could be that the mindset of our institutions needs to shift – away from result-oriented to process-oriented goals in order to encourage student musicians to practice in a more effective and efficient way. Although external focus means focussing on the intended result of one's actions, this should be interpreted not in terms of gain or of quantifiable results, but in clarity of expression and successful communication.

### **Bridging Science and Musical Practice**

*Quality Practice – A Musician's Guide* is an additional outcome of the research presented in this thesis. It was written and designed to showcase in a concrete and practical way the current knowledge about motor learning for musicians. Through navigating scientific studies on motor learning, being excited and inspired about the significance of many of the theories and findings for musicians, I came to realise that much of the valuable information remained in the domains of science and did not necessarily permeate into practice (this is perhaps less so in the fields of sports or rehabilitation). I recognised the need for a bridge between relevant information on the nature of motor learning and musicians' practice rooms, teaching studios and the stage. During the process of putting together a workbook and online manual that could benefit musicians, I became aware that several things are important: that the information presented is clear and easy to grasp even for someone without a scientific background; that the knowledge presented is empirically based; that the implications of each topic are stated and there are clear examples of how the information can be immediately applied and experienced; that the manual is attractive and easy to use without being superficial in content; that work-forms are presented to use as teaching/learning materials; that references for each topic are available for those who want more intellectual understanding.

There has been ample feedback from teachers and musicians – sometimes recognising new and useful knowledge and ways to implement it but, more often than not, reports of confirmation of what many are already doing or observing. Many teachers and musicians have a great deal of intrinsic knowledge and wisdom, and can benefit from it being confirmed by the scientific world. Strengthening a dialogue between science and art could surely benefit both.

Figure 10.1 Quality Practice – A Musician’s Guide

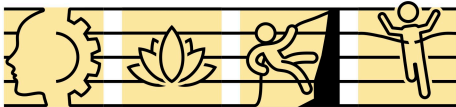
Susan Williams

# QUALITY PRACTICE

## A MUSICIAN’S GUIDE

### THE ART OF PRACTICING

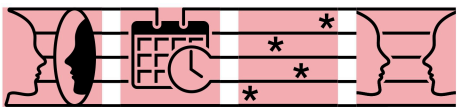
**FOUNDATIONS**



Mindset and self-efficacy
Wellness
Motivation
Goals

You are the instrument!

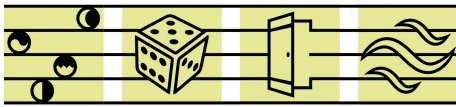
**SELF-REGULATION**



Self-assessment
Planning practice
Assessing performance
Feedback

Develop a reflective approach to learning by creating a continuous spiral of preparation, performance, assessment, learning, preparation ...

**EXPLORATION**



Varied practice
Random practice
Improvisation
Flow

Get to know your music, your instrument and your self.

**ATTENTIONAL FOCUS**



Observational practice
Mental training
External focus
Audiation

Train knowing what you want to hear and what you want to say.

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- Current theories on practice and motor learning
- Applications for the lesson and the practice room
- Worksheets
- Practice cards

See separate pdf file for the entire document.

## FINDING FOCUS: Summary

Recent research on attentional focus suggests that an optimal focus for learning complex movements involves focussing on the intended outcome of the movements rather than the movements themselves. This *external* focus has been researched and applied in sports and movement sciences but is not yet widely understood, or applied to the field of the performing arts.

The question for a musician “what do I need to focus on for optimal learning and performance?” is the topic of this research. Theories and findings on motor control and attentional focus are examined and external focus of attention is translated into musical contexts. Three interventions were designed to see how external focus works in a complex artistic environment. The findings imply that teachers of musicians need to develop ways to train their students to pay more attention to their musical intention and not only on their physical movements or on the technical aspects of the music.

The dissertation is divided into three parts.

Part I – Making Music (Chapters 1-3) – presents a literature review of relevant theories and research on motor learning and attentional focus. Conclusions from the review point out that music-making involves complex motor control and that results from research into implicit motor learning and external focus of attention suggest that external focus could be of benefit to musicians. Audiation is defined and proposed as an example of external focus for music-making, and a practice tool based on audiation is designed and then used in three empirical projects/interventions.

Part II – Focussing on Musical Intention (Chapters 4-7) – presents the three empirical projects in which the audiation practice tool is evaluated experimentally.

Part III – Discussion, Conclusions and Recommendations (Chapters 8-10) – here the combined results of the projects are then compared with the existing research on external focus to determine whether external focus is beneficial for learning and performing music, and whether there are some new insights into external focus of attention from a study based on musicians.

A brief description of each chapter follows.

### **PART I: Making Music**

**Chapter 1 – Learning Motor Skills** – explains that music-making is a psychomotor activity involving motor learning. The nature and aspects of motor learning are explained, and the main current theories of motor learning are presented and discussed. Of particular interest and importance is the implicit motor learning theory – a theory put forward by Richard Masters, which claims that movement skills are better learned without much declarative knowledge or

conscious cognition. The three stages of learning are described, and the role of attention in motor learning is discussed –in particular the question of what kind of attention is recommended for each stage of learning. Conclusions from Chapter 1 raise doubts about the efficacy of declarative learning – even in the early stage of skill acquisition.

**Chapter 2 – Attentional Focus for Learning and Performance** – discusses attentional focus and presents in detail the relevant research and findings on external focus. The chapter concludes with a report on research about external focus in the performing arts and presents ideas about how external focus can be applied to music-making.

**In Chapter 3 – Audiation: Practicing Musical Intention** – audiation is proposed as a form of external focus for music-making. Audiation is defined and described as the use of musical imagery, singing, use of gesture and practicing variations as a way to practice exploring and clarifying the musical intention of the player. The chapter forms a basis for the design of a practice tool – APT (Audiation Practice Tool) – to be used in the three empirical projects.

## **PART II: Focussing on Musical Intention: Three Empirical Projects**

**Chapter 4 – An Overview of the Projects** – presents three empirical projects that explore the effects of external focus on musical learning and performance. A brief description of each project is followed by the research questions and hypotheses as well as an explanation of how external focus is used in each project.

**Chapters 5, 6 and 7** – describe each of the three projects respectively. Aims, subjects, methods and measures, procedure, results, analysis and conclusions are presented for each of the projects. Project One asked “What are the effects of external focus on the accuracy and confidence of natural trumpeters?” using a mixed methods intervention. The results showing the benefits of the external focus tool compared to the participants’ usual way of practicing were around the threshold of significance for accuracy and there were positive trends for self-efficacy for performance and for confidence. Project Two investigated how external focus affected the preparation and performance of a trumpet consort concert (the seven participants from Project One also participated in Project Two). Qualitative data was collected in this project, revealing that the participants were more engaged and suffered less nervousness than usual during performance. Project Three involved a mixed ensemble of string players, trumpeters and keyboard players in a workshop and performance of instrumental music. Again, external focus was at the centre of the pedagogy and methods used in the project, and the participants were asked for their feedback. The results revealed that several of the participants experienced a positive “out of the ordinary” concert experience, as well as positive reactions to approaching rehearsals and concert preparation with external focus.

### **PART III: Discussion, Conclusions and Recommendations**

**Chapter 8 – General Discussion of the Research Findings** – connects the theory and research presented in the literature review with the findings from the present study (including all three empirical projects), revealing what this study can confirm and suggesting further areas for research.

**Chapter 9 – Conclusions: Approaching Practice and Performance** – argues a holistic approach to music-making. The three stages of learning that were described in the literature review in Chapter 1 are reformulated to reflect how implicit learning and external focus can be used to benefit the learning and performing process.

**Chapter 10 – Disseminating and Applying Research on Musicians' Motor Learning to Musicians and their Teachers** – reflects the motivation behind the research presented in this thesis as well as illustrating a way of presenting information about psychomotor learning in such a way that it can be readily used in the practice room, in the lesson and on stage. A workbook for musicians – *Quality Practice* – written by the researcher is presented as an example of applying research and findings from psychology, pedagogy and neuroscience about motor learning to music-making. A central theme of this workbook is the role of attention throughout the learning process. Making relevant empirically based knowledge available and accessible for musicians can thus encourage new and innovative ways to practice, learn and perform.