

https://dspace.org/

Educational, clinical and counselling psychologists' perceptions of and readiness to incorporate brain technologies into their everyday practices.

Hall, Tracey Leigh

2011-04-08
http://hdl.handle.net/10539/9399

Downloaded from a DSpace repository. https://dspace.org/

DECLARATION

A research project submitted in partial fulfillment of the requirements for the degree of M.Ed (Ed Psych) by coursework and Research Report in the Faculty of Humanities, University of the Witwatersrand, Johannesburg, 2010.

I declare that this research is my own, unaided work. It has not been submitted before for any other degree, part of degree or examination at this or any other university.

..... ……day of……..2010

Tracey Hall

ABSTRACT

The aim of this study was to investigate psychologist's perceptions and willingness to incorporate brain technologies, such as Neurofeedback and qEEG (quantitative electroencephalography), into everyday practice. This research was considered important as numerous studies on the benefits of using these technologies have been documented, yet despite this not many psychologists have incorporated them into their practices. The sample consisted of 50 psychologists in Gauteng who completed a self- administered questionnaire. The data collected was analysed using Thematic content analysis and the emerging themes were examined in line with the research aims.

Results from the study indicate that Psychologists' knowledge and understanding of the brain technologies are limited, more so in the case of qEEG than with Neurotherapy. Resistance towards the incorporation of the technologies is present. The main causes of resistance appear to be related towards a number of concerns or reservations held by psychologists. Amongst these were the need for more research in terms of efficacy and concerns about costs of equipment, training and accreditation. Despite some of the resistance present, psychologists seem to perceive the technologies as useful in treating attention, concentration, learning, anxiety and mood disorders. Psychologists stated that they were generally open to receiving further education and training on these technologies. The study looked at the suggestions and comments made by psychologists concerning what they considered necessary to aid in the incorporation of these technologies.

ACKNOWLEDGEMENTS

The author wishes to acknowledge the efforts made by a number of people who have facilitated the process of producing this dissertation.

Grizelda Coetsee…My dear friend, thank you for all your unwavering support, help and guidance, especially through many long nights!

Dr. Charmaine Gordon…My supervisor, for her mentorship, encouragement and guidance in this research.

Sylvia Sharbel-Faehry…Thank you for aiding me in the transcription of my data as well as for the constant affirmation.

Alvina Vorster…Your assistance in editing and proof-reading was greatly appreciated.

Above all Thank you to my Maker.

DEDICATION

To my parents

The journey of a thousand miles begins with a single step

- Lao Tzu

Thank you both for always supporting me in my every step along this journey.

To my dad, Graeme, for his patience, endurance and support all through my studies.

In Loving Memory of my mom, Diane Hall

1958 – 2002

Table of Contents

Declaration i

Abstract ii

Acknowledgements iii

Dedication iv

List of Figures xii

List of Tables xiv

Chapter One: Introduction 1

1.1 Background and Context 1

1.2 Rationale 3

1.3 Aims 5

1.4 Summary of Chapters 5

Chapter Two: Literature Review 6

2.1 Neurotherapy and qEEG 6

2.1.1 History of EEG Neurofeedback and qEEG 6

2.1.2	What is Neurofeedback?	8
2.1.3	What is Quantitative Electroencephalogram?	12
2.1.4	qEEG, Neurofeedback and Evidence-Based Practice	14
2.1.5	Standards of practice for professionals Utilising qEEG and Neurofeedback in the treatment of various disorders	16
2.1.6	Who benefits from Neurofeedback Training and qEEG?	17
2.1.6a	Attention Deficit Hyperactivity Disorder (ADHD)	17
2.1.6b	Learning Disorders (LD)	19
2.1.6c	Autistic Spectrum Disorders (ASD)	21
2.1.6d	Depression	22
2.1.6e	Anxiety	24
2.1.6f	Neurological Disorders/Epilepsy/Seizure Disorders	27
2.1.6g	Alcoholism and Substance Abuse	28
2.1.6h	Traumatic Brain Injury	30
2.2	Perception	31

2.3 Resistance 33

2.3.1 Psychology of innovation resistance 37

Chapter Three: Methodology 39

3.1 Research Questions 39

3.2 Method 39

3.2.1 Sample and sampling 39

3.2.2 Procedure 40

3.2.3 Research design 41

3.2.4 Instrument 42

3.3 Data Analysis 42

3.4 Ethical Considerations 45

Chapter Four: Results 46

4.1 Biographical Information 46

4.2 Emerging Themes 48

4.2.1 Main theme 48

4.2.2	Sub theme one: Lack of knowledge and understanding of the Technologies	48
4.2.3	Sub theme two: Perceived utility of these technologies to the field of Educational Psychology	53
4.2.4	Sub theme three: Perceived benefits of incorporating these technologies into practices	54
4.2.5	Sub theme four: Resistance or willingness to incorporate these technologies	56
4.2.6	Sub theme five: Psychologists have many concerns regarding the use of these technologies and these are influencing their perceptions of and willingness to incorporate them into their practices	59
4.2.7	Sub theme six: Experience of benefit	60
4.2.8	Sub theme seven: Perceptions on what is needed to assist in the incorporation of these technologies	61

4.2.9 Sub theme eight: Psychologists interest in receiving further training in these technologies 62

4.2.10 Sub theme nine: Psychologists suggestions 63

Chapter Five: Discussion 64

5.1 Biographical Information 64

5.1.2 Common disorders reported 64

5.2 Emerging Themes 65

5.2.1 Main theme 65

5.2.2 Sub theme one: Lack of knowledge and understanding of the Technologies 65

5.2.3 Sub theme two: Perceived utility of these technologies to the field of Educational Psychology 68

5.2.4 Sub theme three: Perceived benefits of incorporating these technologies into practices 68

5.2.5 Sub theme four: Resistance or willingness to incorporate these technologies 69

5.2.6	Sub theme five: Concerns regarding these technologies	70
5.2.7	Sub theme six: Experience of benefit of using these technologies	72
5.2.8	Sub theme seven: Perceptions on what is needed to assist in the incorporation of these technologies	73
5.2.9	Sub theme eight: Psychologists interest in receiving further training in these technologies	73
5.2.10	Sub theme nine: Psychologists suggestions	73
5.3	Conclusion	74
5.4	Limitations of the Study and Recommendations	75
References		77
Appendices		91
Appendix A	Subject Information Sheet	91
Appendix B	Consent Form	93
Appendix C	Self-Administered Questionnaire	94
Appendix D	Letter of Permission from Site	99

Appendix E Ethical Clearance Certificate 101

List of Figures

		Page
Figure 2.1	EEG recordings of the various brain waves	9
Figure 2.2	The Neurofeedback training session	10
Figure 2.3	Measurements from the 19 sites are converted into a colour map showing abnormalities in brainwaves	13
Figure 2.4	A qEEG depression profile showing abnormal deviation in the right frontal lobe	14
Figure 4.1	Common problems reported	48
Figure 4.2	Psychologists knowledge and understanding of Neurofeedback	51
Figure 4.3	Psychologists knowledge and understanding of qEEG	52
Figure 4.4	Perceived utility of the technologies	54
Figure 4.5	Willingness of psychologists to incorporate these Technologies	58
Figure 4.6	Experience of benefits	61

Figure 4.7 Psychologists interest in receiving further training and Education 62

List of Tables

		Page
Table 4.1	Participants biographical information	46
Table 4.2	Frequency table of perceived benefits of incorporating the technologies	55
Table 4.3	Frequency table of psychologists reasons for not incorporating the technologies	56
Table 4.4	Psychologists concerns regarding the incorporation of brain technologies	59
Table 4.5	Frequency table of perceptions on what would assist in the incorporation of the brain technologies	61